

An Affordance Management, Life History Approach
to Perceptions of Criminal Behavior

by

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ABSTRACT

Why do social perceivers use race to infer a target's propensity for criminal behavior and likelihood of re-offense? Life history theory proposes that the harshness and unpredictability of one's environment shapes individuals' behavior, with harsh and unpredictable ("desperate") ecologies inducing "fast" life history strategies (characterized by present-focused behaviors), and resource-sufficient and stable ("hopeful") ecologies inducing "slow" life history strategies (characterized by future-focused behaviors). Social perceivers have an implicit understanding of the ways in which ecology shapes behavior, and use cues to ecology to infer a target's likely life history strategy. Additionally, because race is confounded with ecology in the United States, American perceivers use race as a heuristic cue to ecology, stereotyping Black individuals as possessing faster life history strategies than White individuals. In the current project, I proposed that many race stereotypes about propensity for criminality and recidivism actually reflect inferences of life history strategy, and thus track beliefs about the behavioral effects of ecology, rather than race. In a series of three studies, I explored the relationship between ecology, race, and perceptions of criminal behavior. Participants in each experiment were recruited through an online marketplace. Findings indicated that (1) stereotypes regarding likelihood to engage in specific crimes were largely driven by beliefs about the presumed ecology of the offender, rather than the offender's race, such that Black and White targets from desperate (and hopeful) ecologies were stereotyped as similarly likely (or unlikely) to commit a variety of crimes; (2) lay beliefs about recidivism predictors likewise reflected inferences of life history strategy, and thus also tracked ecology rather than race; (3) when evaluating whether to release a specific offender on parole, participants

placed greater importance on ecology information as compared to race information in a point allocation task, and prioritized ecology information over race information in a ranking task. Taken together, these findings suggest that beliefs about criminality and recidivism may not be driven by race, per se, but instead reflect inferences of how one's ecology shapes behavior. Implications of these findings for understanding and reducing racial bias in the criminal justice system are discussed.

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TABLE OF CONTENTS

	Page
LIST OF TABLES	x
LIST OF FIGURES	xi
INTRODUCTION	1
The Influence of Race on Legal Decision-Making and Outcomes	2
Affordance Management and Life History Theory	7
The Use of Race as a Cue to Ecology	11
Race and Ecology in the Criminal Justice Context	13
Overview of Studies	15
PILOT	17
Overview	17
Method	17
Participants	17
Materials & Procedure	17
Results & Discussion	19
Crimes Vary in Perceived Level of Race Stereotypicality	19
Crimes Vary in Perceived Level of Severity	21
Crimes Vary in Perceived Level of Ecology Stereotypicality	22
STUDY 1	25
Overview	25
Method	25
Participants	25

	Page
Materials & Procedure	25
Results.....	29
Ecology Overrides Race – Williams and Colleagues (2016) Replication	29
Ecology, Not Race, Predicts Beliefs About Criminal Engagement.....	34
Political Ideology Shapes Beliefs About Criminal Engagement in the Black Hopeful Ecologies	44
Discussion	46
STUDY 2	51
Overview.....	51
Method	51
Participants.....	51
Materials & Procedure	51
Results.....	55
Ecology, Not Race, Predicts Beliefs About Life History Strategy-Relevant Recidivism Predictors	55
Ecology Does Not Shape Beliefs About Life History Strategy-Irrelevant Recidivism Predictors	57
Ecology Does Not Shape Beliefs About Life History Strategy-Irrelevant Filler Items	62
Discussion	64
STUDY 3	67

	Page
Overview	67
Method	67
Participants.....	67
Materials & Procedure	67
Results.....	71
In the Absence of Ecology Information, Race Information is Used to Predict Recidivism	71
In the Absence of Race Information, Ecology Information is Used to Predict Recidivism	74
In the Presence of Both Race and Ecology Information, Ecology Information Overrides the Use of Race for Predicting Recidivism	76
Ecology Information is Prioritized in a Ranking Task	79
Discussion	81
GENERAL DISCUSSION	85
Summary of Findings.....	85
Why are Black Individuals From Hopeful Ecologies Stereotyped as Especially Slow Life History Strategists?	88
What is the Association Between Hopeful Ecologies and Crimes?	90
Sample and Stimuli	91
Race/Ethnicity Composition of Sample.....	91
Budget Methodology for Assessing Importance of Recidivism Predictors	92

	Page
Implications for Reducing Discrimination in the Criminal Justice System.....	93
Implications for the Use of Existing Recidivism Predictors.....	94
Future Directions	95
Interpretation and Prioritization of Ecology Cues	95
Risk Assessment, as Derived from Life History Theory	95
Affordance Management in the Criminal Justice Context.....	96
Conclusion	96
REFERENCES	98
APPENDIX	
A LIST OF CRIMES PRESENTED IN PILOT STUDY	106
B ECOLOGY X RACE MANIPULATIONS	108
C LIFE HISTORY STRATEGY STEREOTYPE ITEMS	110
D MOTIVATION TO RESPOND WITHOUT PREJUDICE	112
E RECIDIVISM PREDICTORS	114
F PARTICIPANT INSTRUCTIONS FOR STUDY 3	116
G RECIDIVISM INFORMATION	118
H SUPPLEMENTAL ANALYSES & TEXT	120

LIST OF TABLES

Table	Page
1. Pilot Ratings of Crimes on Race Stereotypicality, Severity, and Ecology	23
2. Means and Standard Deviations of Points Allocated (Study 3)	79
3. Means and Standard Deviations of Recidivism Predictor Rankings (Study 3) ..	81

LIST OF FIGURES

Figure	Page
1. Life History Strategy Stereotypes as a Function of Manipulated Ecology and Race	33
2. Life History Strategy Stereotypes as a Function of Political Ideology and Manipulated Ecology/Race	34
3. Perceived Likelihood of Committing Drug Possession With Intent to Sell as a Function of Race and Ecology	36
4. Perceived Likelihood of Committing Cybercrime as a Function of Race and Ecology	38
5. Perceived Likelihood of Committing Forgery as a Function of Race and Ecology	39
6. Perceived Likelihood of Committing Serial Killings as a Function of Race and Ecology	40
7. Perceived Likelihood of Committing Possession of Child Pornography as a Function of Race and Ecology	41
8. Perceived Likelihood of Committing Domestic Violence as a Function of Race and Ecology	43
9. Perceived Likelihood of Committing Driving Under the Influence of Alcohol as a Function of Race and Ecology	44
10. Perceived Likelihood of Exhibiting Life History Strategy-Relevant Recidivism Predictors as a Function of Race and Ecology.....	57
11. Perceived Likelihood of Being a Parent as a Function of Race and Ecology.....	58

Figure	Page
12. Perceived Likelihood of Having a Mental Illness as a Function of Race and Ecology	60
13. Perceived Likelihood of Having an Antisocial Personality as a Function of Race and Ecology	61
14. Perceived Likelihood of Being Intelligent as a Function of Race and Ecology ..	62
15. Perceived Likelihood of Owning a Pet as a Function of Race and Ecology	63
16. Perceived Likelihood of Being an Extrovert as a Function of Race and Ecology	64
17. Number of Points Allocated to Information About the Inmate' s Ethnicity/Race as a Function of Participant Sex and Political Ideology	74

INTRODUCTION

Justitia, the Roman goddess of Justice, is often depicted wearing a blindfold, symbolizing objectivity in the enforcement of moral codes. The Western concept of fairness values impartiality, embodied in a legal system that endeavors to reduce the influence of certain individuating characteristics—such as defendants’ race—that are deemed irrelevant and pernicious to considerations of guilt and culpability.

To increase impartiality, the legal system has imposed filters and standards that acknowledge the reality of biases, prejudices, and people’s tendency to draw conclusions using limited information. For example, jurors in criminal trials who indicate that the race of the perpetrator may influence their verdict decisions are summarily excused from service. If a defendant is found guilty, mandatory minimum sentencing guidelines reduce flexibility in judicial punishment decisions for certain crimes. Despite these efforts, a wealth of literature indicates that a person’s race continues to play a role in his or her criminal justice outcomes. How do we explain why social perceivers use race to infer, for example, an individual’s propensity for physical aggression, engagement with crime, and likelihood of re-offense?

An answer to this question is revealed by the application of an affordance management approach to social perception and behavior. A major function of the social mind is to identify current and future threats and opportunities, and to respond to them in ways that are threat-reducing and opportunity-enhancing (e.g., Gibson, 1979; McArthur & Baron, 1983; Neuberg, Kenrick, & Schaller, 2010; Zebrowitz & Montepare, 2006). However, we cannot directly intuit others’ behavioral intentions; instead, we infer these intentions (with imperfect accuracy) from what cues we can perceive (e.g., Neuberg &

Sng, 2013). Just as we use, for example, the angry expression on an approaching person's face as a cue to infer an intention to aggress, and subsequently incline ourselves to behaviorally flee or fight, we may also use (accurately or not) attributes such as race to infer a propensity for violent behavior, and subsequently incline ourselves to punish harshly.

A theory from the biological sciences, *life history theory*, provides a cohesive framework for understanding why social perceivers use race as a heuristic cue to predict others' behavior (Neuberg & Sng, 2013; Williams, Sng, & Neuberg, 2016). By integrating an affordance management approach to social perception with life history theory, I propose that, in the context of legal decision-making, our social perception system can lead to the undesirable application of stereotypes to individuals, which may ultimately result in unfair, discriminatory outcomes.

I begin by briefly reviewing evidence that race does indeed play a continuing role in assessments of crime, culpability, punishment, and recidivism. I then introduce affordance management and life history theory, illustrating how these frameworks help explain the link between an individual's race and beliefs about that person's inclinations and behavior. In a series of three studies, I test the prediction that such beliefs actually reflect underlying inferences about the presumed life history strategy of the target, and I demonstrate how providing immediate cues to ecology may reduce the application of pernicious race stereotypes in a criminal justice context.

The influence of race on legal decision-making and outcomes

Jurors in criminal trials are responsible for determining, given the facts of the case, whether or not defendants are guilty of the crimes for which they have been

charged. In civil trials, jurors may additionally be tasked with awarding damages. In contrast, the interpretation of law and sentencing determinations remain within the judge's sphere. However, far before a case reaches the trial stage, discretion existing throughout the legal process may provide opportunity for racial bias to systematically influence decision-making. For example, police officers often face a choice between making an arrest or giving a warning, and must allocate investment of limited resources and manpower between alternative cases and suspects (Goldstein, 1960; Sobol, 2010). Prosecutorial discretion allows for flexibility in the specific charges brought against defendants, the availability and content of plea bargains, and the ultimate range of sentencing possibilities (Misner, 1996; Paternoster, 1984; Reinganum, 1988; Shermer & Johnson, 2010). The characteristics of the defendant and the nature of the crime may even influence how judges evaluate motions to dismiss the case, challenges to the admission of evidence, and instructions to the jury (Fischman & Schanzenbach, 2012; Gelsthorpe & Padfield, 2012; Osler, 2012).

The amount of discretion legal decision-makers have varies depending upon the stage of the criminal justice progression. The system moves forward in successive steps; early decisions (e.g., whether to frisk a particular individual, investigate and arrest a particular suspect, what to charge and how to plea bargain with a particular defendant) are typically characterized by maximum discretion that is minimally guided by law. In later stages (e.g., bail or detention hearings), statutes may guide decisions and discretion is reduced. By the trial stage, people acting jointly publicly apply the laws, and decision-makers are increasingly subject to review. At this juncture, there is less discretion and maximal oversight. However, even if the system succeeds in removing discretion (and

reducing bias) from the decision-making of later stages, the end product retains whatever distribution was initially delivered into the system. In other words, bias at the outset can still result in unfair outcomes—even if later stages of the system successfully reduce discretion. And, indeed, the research described below illustrates that race influences legal decision-makers in a variety of roles and stages.

Before arrests are made, minority individuals are disproportionately subjected to stops and frisks, despite these stops producing fewer weapons or contraband on average than stops of Whites (Gelman, Fagan, & Kiss, 2007; see also *Floyd v. City of New York*, 2013). The use of force during these stops occurs more often with Black or Latino individuals as compared to Whites (Sommers & Marotta, 2014), and arrest data from over 25 independent jurisdictions indicate that minority suspects are more likely to be arrested than White suspects (Kochel, Wilson, & Mastrofski, 2011; Sommers & Marotta, 2014).

After an arrest has occurred, prosecutors often have wide discretion in the charges laid against a particular defendant. Given that the majority of guilty verdicts in criminal trials arise from plea bargains, charging decisions can have tremendous impact on defendant outcomes (Hollander-Blumoff, 2007). Research suggests that prosecutors are influenced by characteristics of the defendant and of the victim in charging decisions (e.g., Smith & Levinson, 2012; Stanko, 1981; Ulmer, Kurlychek & Kramer, 2007). For example, prosecutors attribute greater believability to victims who are ‘stereotypically credible’—older, White, male, and employed (e.g., Myers & Hagan, 1979)—and are more likely to prosecute those cases as a result. In reviewing prosecutor screening decisions at the New York County District Attorney’s Office, one legal scholar notes that

when selecting ‘solid’ cases, “[g]ender, race, and occupation have important social meanings; power and status are often accorded on these grounds. A pleasant appearance, residence in a good neighborhood, a respectable job or occupation, lack of nervous mannerisms, and an ability to articulate clearly, are decided advantages. Inferences that a victim might be a prostitute or a pimp, a homosexual, or an alcoholic, on the other hand, may seriously damage a victim’s credibility. All of these factors must be carefully weighed [in deciding whether and how to charge a case]” (Stanko, 1981, p. 230).

In addition to influencing prosecutors’ charging decisions, race may also influence how defense attorneys counsel their clients. In one study, Edkins (2011) found that defense attorneys presented with a plea scenario were more likely to accept a punitive plea when representing a Black defendant than a White defendant. Defense attorneys also develop strategies to mitigate the risk that jurors’ racial stereotypes may pose to their clients. For example, a recent tactic observed in courtrooms is the use of eyeglasses by defendants who normally wear contacts or who have perfect vision. Noticing this unusual trend, Brown and colleagues (2008) investigated the influence of wearing eyeglasses on determinations of defendant culpability and found that Black male defendants who wore eyeglasses received fewer guilty verdicts than their un-spectacled counterparts, due to being perceived as more intelligent and less physically threatening.

If and when criminal cases result in trial, archival studies examining real-world juror verdicts indicate that minority defendants are more likely than White defendants to be convicted of similar crimes (e.g., Sommers & Marotta, 2014), and especially so if the victim is White (Baldus, Woodworth, & Pulaski, 1990). Additional trial outcome data suggest that the likelihood that a Black defendant will be convicted increases with the

percentage of Whites on the jury (Lynch & Haney, 2009; Williams & Burek, 2008). Experimental studies using mock jury simulations likewise suggest an effect of defendant race on trial outcomes: A meta-analysis examining data from more than 7,000 participants concludes that there is a “small, but significant effect for racial bias in both verdict and sentencing decisions” (Mitchell, Haw, Pfeifer, & Meissner, 2005, p. 629). Although research suggests that legally relevant factors such as the evidence and arguments presented at trial account for much of the variance in juror decision-making (e.g., Ford, 1986; Visser, 1987), race may continue to play a small, but invidious, role in conviction.

Once a verdict has been established, judges also play a part in the reality of sentencing discrepancies based on defendant race. In a meta-analysis examining archival data from over 70 studies, Mitchell (2005) finds that Black defendants receive more severe sentences than White defendants; furthermore, these effects persist after controlling for severity of offense and previous criminal history. Some scholars suggest that these differences in sentencing are driven by judges’ perception of Black offenders as more threatening, dangerous, prone to chronic offending, and more likely to recidivate than White offenders (Bridges & Steen, 1998; Hagan, 1984; Huebner & Bynum, 2008; Steffensmeier, Ulmer, & Kramer, 1998).

Finally, research indicates that racial bias also influences decisions on post-incarceration release. For example, Black offenders spend a longer time in prison awaiting parole than White offenders, and are less likely to be released on parole (e.g., Huebner & Bynum, 2008; Proctor, 1999). Again, these results have been suggested to

reflect parole actors' use of race as a cue to dangerousness and risk of re-offense (Huebner & Bynum, 2008).

As illustrated above, abundant research provides evidence that—from arrest to trial to post-conviction release—a person's race may influence his or her legal outcomes. However, this rich body of literature is primarily descriptive in nature; it provides a detailed account of the ways in which race affects outcomes, but does not provide a coherent theoretical framework for understanding *why* legal decision-makers use race as a cue to inform their judgments of guilt, culpability, and punishment. To suggest that individuals use race as a cue for inferring propensity for violence and recidivism is, in itself, an impoverished explanation; this account fails to elucidate why such an association might exist in the first place. Given both the legal system and society's investment in producing just outcomes, an understanding of why race influences legal decision-making may help develop interventions that mitigate or reduce its effects. I suggest that an affordance management and life history perspective may provide the cohesive framework necessary for understanding the use of race in legal determinations.

Affordance management and life history theory

The theory of *affordance management* is a conceptual approach premised on the notion that the central job of the mind is to detect threats and opportunities in our environment, and to respond in functional (i.e., threat-reducing and opportunity-enhancing) ways (e.g., Gibson, 1979; McArthur & Baron, 1983; Neuberg, Kenrick, & Schaller, 2010; Zebrowitz & Montepare, 2006). These threats and opportunities are collectively referred to as 'affordances.'

As human beings, we are highly interdependent, social animals (Brewer, 1997; Campbell, 1982; Richerson & Boyd, 1995). Thus, many of the affordances that we encounter come from interactions with other individuals. These interactions can be highly beneficial: we can meet a new friend or romantic partner, work together to defend ourselves from predation or attack, or draw on the support of others to help raise our children and to care for one another. However, interacting with others also brings potential costs. For example, mere proximity to others increases the risk of catching contagious diseases, being cheated, or being subject to violent confrontation. Additionally, because of our social interdependence, threats to our group also have implications for our individual fitness (Neuberg & Cottrell, 2008). Therefore, our ability to achieve our own goals depends on our ability to successfully manage others, such that they facilitate rather than hinder the achievement of our goals (Neuberg & Sng, 2013).

Managing others requires some understanding of their goals, preferred behavioral strategies for achieving these goals, and ability to implement these behavioral strategies. Unfortunately, we are rarely able to directly perceive others' goals, strategies, or capacities. As a result, we must rely on salient—but imperfect—cues to infer these affordances and respond in functional ways. In addition, we may be predisposed to exaggerate particular threat cues as a function of error management (e.g., Haselton & Buss, 2000).

According to error management theory, although particular psychological mechanisms are adapted—that is, selected over time because they enhanced reproductive fitness—this does not imply that the perceptual system is error-free; rather, it implies that biases are likely to err on whichever side produces the least costs to fitness. Nesse (2005)

referred to this as the *smoke detector principle*, taking as a metaphor the two errors a smoke detector can make. Smoke detectors can be calibrated to be highly sensitive (likely to produce false alarms that are obnoxious but ultimately harmless) or calibrated to be less sensitive (likely to produce a fatal false negative, i.e., fail to sound the alarm when there is a fire). Because false positives are the less costly error, smoke detectors are calibrated in favor of false alarms. Applying this to human behavior, when faced with cues to physical dangerousness, individuals are likely to infer intent to aggress and behave accordingly. The cost of a false positive (in which the opportunity for friendship or exchange may be lost) is far less costly than a false negative (in which severe physical harm or death may occur). Thus, from an affordance management perspective, our psychological system for detecting danger is overly inclusive. Threat cues are imperfectly diagnostic, and resulting inaccuracies are likely to be biased in the direction of exaggerating perceived threats (e.g., Haselton & Nettle, 2006).

In daily life, social perceivers are confronted with all manner of cues—some of which provide us with more valuable information than others. Particularly useful cues to perceivers are those that are not just perceptually accessible, but also relatively invariant, difficult to fake, and—perhaps most importantly—somewhat diagnostic of likely behavior (Neuberg & Sng, 2013). The affordance management framework itself is content-free: it does not propose which cues individuals are likely to use, but it does suggest that cues providing the most affordance-rich information are likely to be prioritized. As a complement to the affordance management framework, *life history theory*, drawn from evolutionary biology, provides insight as to why perceivers might use race, specifically, as a cue for predicting the behavior of others.

Life history theory is premised on the assumption that, due to the finite nature of energetic resources, organisms must make trade-offs between growth, mating, and parenting effort in order to maximize their reproductive fitness (Stearns, 1976). Devoting resources to one of these tasks at any given time necessarily means devoting fewer resources to another; the same calorie cannot be consumed twice.

In sexually reproducing species, the optimal allocation strategy varies across three dimensions: life stage (age), sex, and ecology (Figueredo et al., 2006; Hill & Kaplan, 1999; Stearns, 1976). Age shapes resource allocation priorities because investment may be chronologically constrained (e.g., to devote resources to mating, organisms must first devote resources to growth and obtaining sexual maturity). Sex shapes allocation priorities because males and females face different allocation constraints (e.g., in most mammals, females have a higher minimum obligate parental investment than males) (Trivers, 1972). Finally, ecology shapes allocation priorities by altering the costs and benefits of adopting particular allocation strategies (e.g., prioritizing early investment in growth and reaching sexual maturity is beneficial in ecologies with high mortality rates, as delaying reproduction in such an ecology could result in the organism dying without reproducing).

Researchers have identified two dimensions of ecologies that prominently shape resource allocation strategies: harshness and unpredictability (Ellis et al., 2009). Harshness may be characterized by the amount of available resources, whereas unpredictability refers to fluctuation in environmental conditions. Ecologies that are both harsh and unpredictable are termed ‘desperate’ ecologies, whereas ecologies that are both resource-sufficient and stable are termed ‘hopeful’ ecologies (e.g., Neuberger & Sng, 2013;

Williams et al., 2016). These two ecologies can be thought of as anchoring two ends of a continuum, with variation occurring across the range.

The ecology in which an organism develops will influence the optimal resource allocation strategy, resulting in the engagement of different psychological and behavioral strategies. Desperate environments induce ‘fast’ life history strategies, exemplified by earlier onset of sexual maturity, greater impulsivity, higher number of offspring, and propensity for risk-taking behaviors (including criminality). On the other hand, hopeful environments induce ‘slow’ life history strategies, exemplified by delay of reproduction, greater investment in education, smaller number of offspring, and planning for the future (e.g., Ellis, Figueredo, Brumbach, & Schlomer, 2009). Experimental research supports this notion, finding that activating cues suggestive of desperate ecologies leads individuals to become more sexually promiscuous, aggressive, risk-taking, and present-orientated—especially those individuals who themselves grew up in a relatively desperate environment (Dunkel, Mathes & Beaver, 2013; Dunkel, Mathes & Decker, 2010; Dunkel, Mathes & Papini, 2010; Griskevicius, Tybur, Delton & Robertson, 2011).

The use of race as a cue to ecology

Behaviors associated with fast versus slow life history strategies have potentially important affordance implications for social perceivers. It is useful for us to know whether the individuals we encounter are likely to be impulsive versus reliable, interested in short-term versus long-term romantic relationships, or seek to gain resources and status through physical aggression and violence versus through longer-term acquisition of knowledge and skills; these inclinations have important implications for the achievement of our own goals. Given that ecologies shape behavior in specific ways, perceivers

should be attuned to cues of ecology, and they should use this information to make specific predictions about the likely behaviors of others (Neuberg & Sng, 2013; Williams et al., 2016).

Recent and ongoing research suggests that, indeed, social perceivers have implicit understandings about the ways in which ecology shapes behavior, resulting in ecology-driven stereotypes (Sng, Williams, & Neuberg, in prep; Williams et al., 2016). In a series of studies, Williams and colleagues (2016) explored the existence of these ecology-driven stereotypes and found that social perceivers stereotype individuals from desperate ecologies as more likely to possess fast life history characteristics (e.g., impulsivity, sexual unrestrictedness, propensity for socially opportunistic behaviors), and stereotype individuals from hopeful ecologies as more likely to possess slow life history characteristics (e.g., planfulness, sexual restrictedness, investment in education). Additionally, the researchers found that these ecology-driven stereotypes are not simply derived from wealth stereotypes, and do not reflect a mere positivity bias towards individuals from hopeful ecologies. Furthermore, ecology-driven stereotypes are held by individuals who themselves live in both relatively hopeful and relatively desperate environments (Sng et al., in prep; Williams et al., 2016).

In the United States, race and ecology are somewhat confounded—Whites are more likely to live in relatively resource-sufficient and stable ecologies, whereas Blacks are more likely to live in relatively resource-poor and unpredictable ecologies (e.g., Massey, 2004; Sampson, Raudenbush, & Earls, 1997). This correlation between race and ecology raises the possibility that perceivers may use race as a heuristic cue to ecology, suggesting that some American racial stereotypes may actually reflect *ecology*

stereotypes. Indeed, many of the most prominent stereotypes about Blacks in America include traits such as physically threatening, sexually promiscuous, and impulsive—all of which track the stereotypes characterizing those from desperate ecologies (e.g., Devine & Elliot, 1995; Katz & Braly, 1933; Madon et al., 2001; Williams et al., 2016).

Yet, if race actually serves as a heuristic cue to ecology, directly presenting ecology information should decrease the application of race stereotypes in favor of applying the more affordance-relevant ecology stereotypes. To test this prediction, Williams and colleagues (2016) independently manipulated information about the ecology and race of a target, and measured participants' trait ratings of the target across five life history strategy suites of behavior (impulsivity, sexual unrestrictedness, social opportunism, investment in own education, and investment in children). The researchers found that, in the absence of ecology information, race stereotypes track ecology stereotypes: Black individuals were stereotyped as possessing faster life history strategies than White individuals. However, when both ecology and race information was provided, ecology information overrode race information. That is, there were no differences in the stereotypes applied to Black and White targets from desperate ecologies, and no differences in the stereotypes applied to Black and White targets from hopeful ecologies—they were viewed as similarly possessing fast and slow life history strategies, respectively (Williams et al., 2016).

Race and ecology in the criminal justice context

These findings have potentially important implications for understanding the use of ecology and race as cues in evaluations of criminal engagement, appropriate punishment, and risk of re-offense. First, the theoretical perspective adopted by Williams

and colleagues (2016) offers a novel approach to exploring lay beliefs about criminal engagement and recidivism. Much attention in the criminal justice literature has been devoted to studying the antecedents of crime and the factors that increase the risk of recidivism once an inmate is released from prison (e.g., Beaver, DeLisi, Mears & Stewart, 2009; Benda, Corwyn & Toombs, 2001; Cottle, Lee & Heilbrun, 2001; Ellis, Beaver, & Wright, 2009; Gendreau, Little, & Goggin, 1996; Hanson & Morton-Bourgon, 2009; Kubin, Squires & Stewart, 2007; Nally, Lockwood, Ho & Knutson, 2014; Piquero, Jennings, Diamond & Reingle, 2015; Staton-Tindall & Leukefeld, 2015; Webster, Dickson, & Wehrman, 2010). From a life history perspective, certain ecologies induce suites of psychological and behavioral strategies that include increased propensity for risk-taking and social opportunism (see, e.g., Dunkel et al., 2013, finding that conditions of short life expectancy decreased participants' self-control and increased their self-reported criminal intent). And, indeed, a review of recidivism predictors commonly used in corrections departments for evaluating offender release reveals a collection of attributes directly linked to life history strategy. For example, the Level of Service Inventory-Revised (Andres & Bonta, 2000) includes assessments of the offender's level of education, employment, marital status, and history of substance use. Also included are measures of the harshness and unpredictability of the offenders' home ecology (e.g., their reliance on social assistance, the number of times their residence has changed, the amount of crime in their neighborhood). Thus, many predictors of criminal engagement and recidivism actually function as a cue to the life history strategy of an offender. If life history strategy provides useful information for predicting an individual's engagement in crime and likelihood of re-offense, and ecology provides useful cues for predicting life

history strategy, then social perceivers may use cues of ecology to infer life history strategy and to inform their assessments of punishment and risk of recidivism.

Second, the findings of Williams and colleagues (2016) provide empirical support to extant suppositions—namely, that judges’ and parole actors’ increased punitiveness towards Blacks might be driven by perceptions of dangerousness (Bridges & Steen, 1998; Huebner & Bynum, 2008; Steffensmeier, Ulmer, & Kramer, 1998). In the absence of ecology information, Williams and colleagues (2016) find that social perceivers view Black targets as more likely to be physically aggressive, get angry quickly, resort quickly to violence, and engage in general criminal behavior and drug use than White targets. However, the researchers demonstrate that these stereotypes are actually driven by inferences about the ecology of the target: in the presence of ecology information, no race differences emerged in stereotypes of physical aggression, speed to anger or violence, nor engagement in general criminal behavior and drug use. This suggests that, likewise, stereotypic beliefs about dangerousness and increased risk of recidivism may also reflect inferences of ecology, and not race. If so, then providing information about the ecology of targets should diminish race differences in perceptions of criminality and risk of re-offense.

Overview of studies

In a series of three studies, I explored the relationship between ecology, race, and beliefs about criminal engagement and recidivism. First, an initial pilot study investigated which crimes individuals stereotypically associate with Black and White individuals, respectively, and impressions regarding the severity of these crimes. Study 1 then examined whether stereotypes regarding likelihood to engage in specific crimes are

driven by beliefs about the presumed ecology of the offender, rather than the offender's race. In Study 2, I examined whether lay beliefs about recidivism similarly reflect inferences of life history strategy, and thus also track ecology rather than race. Finally, in Study 3, I examined whether individuals prioritize more causal life history strategy-relevant information (such as home ecology) over secondary, heuristic life history strategy-relevant information (such as race) in predicting the likelihood of re-offense.

PILOT

Overview

Previous research suggests that individuals do perceive certain crimes to be more or less severe, and more or less likely to be committed by members of particular racial groups (e.g., Osborne & Davies, 2012; Robinson & Kurzban, 2007). The Pilot explored whether 33 different crimes were stereotypically associated with Black or White individuals, and impressions regarding the severity of these crimes. Developing a larger taxonomy of such crimes provides an empirical basis for categorizing crimes by severity (low versus high) and race-crime stereotypicality (strongly associated with Blacks, strongly associated with Whites, or race-neutral), thus informing the selection of crimes presented to participants in Study 1, and the manipulation of crime as a function of race stereotypicality in Study 3.

Pilot Method

Participants

Eighty-six individuals (35 female) were recruited from Amazon's Mechanical Turk and paid \$1.00 for their participation. Mean age of the participants was 38.47 ($SD = 13.46$). The majority of participants were White (81.4%). Forty-one percent of participants identified as Democrat, 31.4% Independent, 17.4% Republican, 8.1% Libertarian, 1.2% Green, and 1.2% other.

Materials and Procedure

Participants were told that they were completing a study on general perceptions and impressions of different kinds of crimes. All participants then viewed a series of 33 crimes and civil infractions, presented in random order (see Appendix A). The crimes

were experimenter-generated through brainstorming sessions with undergraduate research assistants, and were intended to capture variability in both race stereotypicality and severity. Participants were randomly assigned to one of three response conditions.

Race Stereotypicality Condition. Participants in the first condition were asked to report the extent to which they believed each violation was associated with different racial groups within the United States (e.g., “To what extent is a drive-by shooting more likely to be committed by members of a particular racial group?”). Responses were reported on a scale of 1 to 9 (1 = Much more likely to be committed by a White individual; 5 = Equally likely to be committed by a White or Black individual; 9 = Much more likely to be committed by a Black individual). Certain crimes were predicted to be strongly associated with Black individuals (e.g., drive-by shooting, possession of drugs with intent to sell), others strongly associated with White individuals (e.g., cybercrime, embezzlement), and others perceived as race-neutral (e.g., statutory rape, underage drinking).

Severity Condition. Participants in the second condition were asked to report how severe they viewed each crime or violation to be (e.g., “To what extent is a drive-by shooting a severe crime?”). Responses were reported on a scale of 1 to 9 (1 = Not at all severe; 9 = Extremely severe). I predicted that certain crimes would be perceived as extremely severe (e.g., murder, child molestation), others as moderately severe (e.g., identity theft, driving under the influence of alcohol), and others as relatively minor (e.g., failure to appear in court, underage drinking).

Ecology Condition. For exploratory purposes, participants in a third condition were presented with descriptions of two types of environments: “A” environments were

described as “wealthy, economically developed communities where money and jobs are plentiful and expected to be available well into the future”; “B” environments were described as “poor, economically underdeveloped communities where money and jobs are scarce and unpredictable, and opportunities are limited.” These ecology descriptions were taken from previous research (Williams et al., 2016).

Participants were then asked to report the extent to which they believed each violation was associated with people from different kinds of environments within the United States (e.g., “To what extent is a drive-by shooting more likely to be committed by individuals from environment A or environment B?”). Responses were reported on a scale of 1 to 9 (1 = Much more likely to be committed by individuals who come from environments like “A”; 5 = Equally likely to be committed by individuals who come from “A” or “B” environments; 9 = Much more likely to be committed by individuals who come from environments like “B”).

Demographic Measures. Participants reported basic demographic information, including their age, gender, race, political ideology, and socioeconomic status. Socioeconomic status was measured in two ways. First, subjective socioeconomic status was measured with four questions (e.g., “I have enough money to buy the things I want”) using a 7-point scale (1 = Strongly Disagree; 7 = Strongly Agree). Participants were also asked to report their objective socioeconomic status (i.e., reporting their current household income on a scale ranging from 1 = less than \$10,000 to 8 = More than \$200,000).

Pilot Results & Discussion

Crimes vary in perceived level of race stereotypicality

Following previous research (e.g., Osborne & Davies, 2012), I predicted that participants would stereotypically associate certain crimes as more likely to be committed by Black individuals, other crimes as more likely to be committed by White individuals, and other crimes as relatively race-neutral. These predictions were supported. Table 1 presents the means and standard deviations for each type of violation. Those crimes with a mean of 6.0 or higher were categorized as stereotypically “Black” crimes: drive-by shooting ($M = 7.34$; $SD = 1.42$); participation in a gang ($M = 6.97$; $SD = 1.52$); vehicle theft ($M = 6.59$; $SD = 1.48$); robbery ($M = 6.34$; $SD = 1.61$); resisting arrest ($M = 6.34$; $SD = 1.42$); illegal possession of a handgun ($M = 6.28$; $SD = 1.56$); burglary ($M = 6.14$; $SD = 1.33$); possession of drugs with intent to sell ($M = 6.03$; $SD = 1.43$); and theft ($M = 6.00$; $SD = 1.43$).

Crimes falling at the midpoint of the scale (a mean of 5.0, $\pm .50$), were categorized as “Race-Neutral”: domestic violence ($M = 5.31$; $SD = 1.07$); child endangerment ($M = 5.22$; $SD = 1.15$); statutory rape ($M = 5.10$; $SD = 1.37$); underage drinking ($M = 4.93$; $SD = 1.00$); prostitution ($M = 4.90$; $SD = 0.72$); driving under the influence of alcohol ($M = 4.83$; $SD = 1.31$); and animal abuse ($M = 4.79$; $SD = 1.63$).

Finally, those crimes with a mean of 4.0 or lower were categorized as stereotypically “White” crimes: cybercrime ($M = 2.93$; $SD = 1.58$); school shootings ($M = 3.28$; $SD = 1.69$); bribery ($M = 3.34$; $SD = 1.72$); serial killings ($M = 3.41$; $SD = 1.82$); embezzlement ($M = 3.41$; $SD = 1.62$); possession of child pornography ($M = 3.69$; $SD =$

1.41); identity theft ($M = 3.86$; $SD = 1.68$); forgery ($M = 3.90$; $SD = 1.34$); arson ($M = 4.00$; $SD = 1.63$); and child molestation ($M = 4.00$; $SD = 1.67$).¹

Crimes vary in perceived level of severity

Following previous research (see, e.g., Robinson & Kurzban, 2007), I predicted that participants would express a range of perceived severity as a function of the type of crime. These predictions were supported. Table 1 presents the means and standard deviations for each type of violation. The average severity rating across all crimes was $M = 6.61$. The most severe crimes (those with ratings greater than 1 standard deviation above the mean) were school shooting ($M = 8.81$, $SD = 0.62$), serial killings ($M = 8.47$, $SD = 0.85$), murder ($M = 8.74$, $SD = 0.81$), drive-by shooting ($M = 8.48$, $SD = 0.80$), human trafficking ($M = 8.35$, $SD = 0.94$), and child molestation ($M = 8.33$, $SD = 1.04$). The least severe crimes (those with ratings less than 1 standard deviation below the mean) were vandalism ($M = 4.89$, $SD = 1.97$), failure to appear in court ($M = 4.56$, $SD = 1.97$), prostitution ($M = 3.56$, $SD = 2.36$), and underage drinking ($M = 3.48$, $SD = 1.99$).²

¹ For exploratory purposes, I examined potential sex differences in race-crime stereotypicality using an independent samples t-test within the Race Stereotypicality condition. No sex differences were found in stereotypic race-crime associations for 31 of 33 presented crimes (all $ps > .05$). However, males reported a stronger association between Blacks and resisting arrest ($M = 6.78$, $SD = 1.48$) than did females ($M = 5.63$, $SD = 1.03$), $t(27) = 2.25$, $p = .03$, $d = .87$. Similarly, males reported a stronger association between Blacks and animal abuse ($M = 5.28$, $SD = 1.56$) than did females ($M = 4.00$, $SD = 1.48$), $t(27) = 2.18$, $p = .04$, $d = .84$. These findings should be interpreted with caution given the small sample size ($N_{\text{female}} = 11$).

² For exploratory purposes, I again examined potential sex differences in severity ratings using an independent samples t-test within the Severity condition. No sex differences were found in severity ratings for 28 of 33 presented crimes (all $ps > .06$). However, females reported higher severity ratings than did males for child molestation ($M_{\text{female}} = 8.85$, $SD_{\text{female}} = 0.38$; $M_{\text{male}} = 7.86$, $SD_{\text{male}} = 1.23$; $t(25) = -2.78$, $p = .01$); statutory rape ($M_{\text{female}} = 8.15$, $SD_{\text{female}} = 0.90$; $M_{\text{male}} = 6.64$, $SD_{\text{male}} = 1.74$; $t(25) = -2.81$, $p = .01$);

Crimes vary in perceived level of ecology stereotypicality

Due to the confounded nature of race and ecology within the United States (see, e.g., Massey, 2004; Williams et al., 2016), I predicted that there would be significant overlap in the crimes associated with individuals from “B” (desperate) environments and those associated with Black individuals, as well as significant overlap in the crimes associated with individuals from “A” (hopeful) environments and those associated with White individuals. These predictions were supported. Table 1 presents the means and standard deviations for each type of violation. Of the nine crimes categorized as “Black” in the race stereotypicality condition, all fell above the midpoint of the scale (i.e., > 5.0)—indicating greater association with individuals from “B” (i.e., desperate) ecologies. Of the ten crimes categorized as “White” in the race-stereotypicality condition, six³ fell below the midpoint of the scale (i.e., < 5.0)—indicating greater association with individuals from “A” (i.e., hopeful) ecologies.

stalking ($M_{\text{female}} = 7.31$, $SD_{\text{female}} = 1.32$; $M_{\text{male}} = 5.64$, $SD_{\text{male}} = 1.91$; $t(25) = -2.62$, $p = .02$); driving under the influence of alcohol ($M_{\text{female}} = 7.46$, $SD_{\text{female}} = 1.27$; $M_{\text{male}} = 6.36$, $SD_{\text{male}} = 1.39$; $t(25) = -2.15$, $p = .04$); and domestic violence ($M_{\text{female}} = 7.77$, $SD_{\text{female}} = 0.93$; $M_{\text{male}} = 6.43$, $SD_{\text{male}} = 1.87$; $t(25) = -2.33$, $p = .03$). These findings should again be interpreted with caution given the small sample size ($N_{\text{female}} = 13$).

³ These six crimes were identity theft, forgery, possession of child pornography, cybercrime, bribery, and embezzlement. Of the four “White” crimes above the midpoint of the scale (child molestation, serial killings, school shootings, arson), all received an average rating below 6. See Table 1.

Table 1. Pilot ratings of crimes on race stereotypicality, severity, and ecology association. All ratings reported on a 9-point scale. Table presents means and standard deviations (sorted as a function of race stereotypicality, in descending order). Higher numbers in the race stereotypicality ratings indicate greater association with Black individuals. Higher numbers in the severity ratings indicate greater perceived severity. Higher numbers in the ecology ratings indicate greater association with individuals from desperate environments.

Crime Type	Race Stereotypicality Rating		Severity Rating		Ecology Association Rating	
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>
Drive-by Shooting	7.34	1.42	8.48	0.8	8.17	0.89
Participation in a Gang	6.97	1.52	5.59	1.87	8.17	1.05
Vehicle Theft	6.59	1.48	6.52	1.60	7.63	1.07
Robbery	6.34	1.61	7.03	1.60	7.10	1.30
Resisting Arrest	6.34	1.42	5.41	2.45	6.43	1.40
Illegal Possession of a Handgun	6.28	1.56	5.56	1.80	6.79	1.50
Burglary	6.14	1.33	6.63	1.78	7.10	1.49
Drug Possession with Intent to Sell	6.03	1.43	5.59	2.34	6.70	1.49
Theft	6.00	1.46	6.41	1.89	7.00	1.30
Failure to Appear in Court	5.97	1.24	4.56	1.97	6.57	1.72
Murder	5.93	1.41	8.74	0.81	6.13	1.41
Failure to Pay Child Support	5.82	1.25	5.48	1.99	6.57	1.65
Vandalism	5.62	1.68	4.89	1.97	7.00	1.48
Domestic Violence	5.31	1.07	7.07	1.62	5.47	1.2
Child Endangerment	5.22	1.15	7.78	1.09	6.23	1.33
Statutory Rape	5.10	1.37	7.37	1.57	5.20	1.16
Underage Drinking	4.93	1.00	3.48	1.99	5.14	1.19
Prostitution	4.90	0.72	3.56	2.36	7.03	1.63
Driving Under the Influence of Alcohol	4.83	1.31	6.89	1.42	5.30	1.15
Animal Abuse	4.79	1.63	7.37	1.8	5.93	1.36
Stalking	4.24	1.64	6.44	1.83	5.00	1.01
Fraud	4.17	1.26	6.44	1.53	4.37	1.87
Human Trafficking	4.14	1.87	8.35	0.94	5.17	2.05
Child Molestation	4.00	1.67	8.33	1.04	5.03	1.24
Arson	4.00	1.63	7.81	1.42	5.73	1.23
Forgery	3.90	1.34	6.00	1.73	4.40	1.73
Identity Theft	3.86	1.68	6.63	1.71	4.90	1.51
Possession of Child Pornography	3.69	1.41	7.11	2.10	4.40	1.75
Embezzlement	3.41	1.62	6.54	1.56	2.62	1.50
Serial Killings	3.41	1.82	8.78	0.85	5.17	2.03
Bribery	3.34	1.72	6.11	1.76	2.93	1.46
School Shootings	3.28	1.69	8.81	0.62	5.17	1.70
Cybercrime	2.93	1.58	6.52	1.72	3.97	1.42

In sum, participants' responses in the pilot study suggest variability in individuals' perceived associations between specific crimes and their race stereotypicality, severity, and association with individuals from hopeful and desperate ecologies. These findings provide an empirical basis for selecting crimes as a function of their race stereotypicality for use in Study 1, and ensure that these crime selections do not unintentionally confound race stereotypicality and severity. Additionally, the significant overlap between race-stereotypical crimes and ecology-stereotypical crimes provides initial evidence for the hypothesis that beliefs about Black individuals' engagement in different kinds of crimes may actually reflect underlying beliefs about the effect of ecology for shaping criminal behavior. The design of Study 1 allows for a more direct test of this prediction.

STUDY 1

Overview

Previous research suggests that social perceivers use ecology information to infer the life history strategy of targets, and that life history strategy provides useful information for predicting an individual's general propensity for criminality (e.g., Williams et al., 2016). Thus, I proposed that social perceivers would prioritize more immediate, causal information about life history strategy (e.g., home ecology) over secondary heuristic cues (e.g., race) to inform their assessments of criminality. Study 1 therefore explored the extent to which stereotypes regarding likelihood to engage in crime are driven by beliefs about the presumed ecology of the offender, rather than the offender's race.

Study 1 Method

Participants

Four hundred and fifty-five individuals (226 female) were recruited from Amazon's Mechanical Turk and paid \$0.75 for their participation. Mean age of the participants was 41.02 ($SD = 13.54$). The majority of participants were White (81.8%).⁴ Forty-four percent of participants identified as Democrat, 26.2% Independent, 23.7% Republican, 3.7% Libertarian, 0.7% Green, and 1.5% other.

Materials and Procedure

⁴ Thirty participants (6.6% of the sample) reported their ethnicity as Black/African-American. Ongoing work by Sng and colleagues (in prep) indicates that ecology-driven stereotypes are held not only by White participants, but by members of minority groups as well (e.g., Black individuals, Asian-American individuals). Additionally, these stereotypes are held by individuals who themselves live in desperate or hopeful ecologies (Sng et al., in prep). Therefore, Black participants are included in all analyses; removing these participants does not significantly alter my results.

Design Overview. Participants were asked to imagine a hypothetical individual and rated this individual on a series of traits assessing life history strategy stereotypes. Participants were provided with race information only, ecology information only, both race and ecology information, or no information about the hypothetical individual. Participants also reported the likelihood that this imagined individual would commit a series of criminal acts, as compared to the average person across the United States. Thus, the study had a 3 (Race [Black, White, No Information]) X 3 (Ecology [Desperate, Hopeful, No Information]) between-subjects design.

Cover Story. The study was presented on Amazon's Mechanical Turk as "an academic survey about social perception." Participants were told that the purpose of the study was to examine individuals' perceptions of various groups and individuals, and that they would be asked to rate their perceptions of different groups or individuals on sets of traits. Participants were then instructed to imagine a hypothetical individual.

*Ecology X Race Manipulation.*⁵ Participants were randomly assigned into one of nine possible conditions in which ecology and race were orthogonally manipulated. Participants imagined either a Black or White individual (with no ecology information provided); an individual from a desperate or hopeful ecology (with no race information

⁵ An alternative version of this manipulation was initially proposed, in which participants were presented with photographs of young Black or White men against a colored background, a hopeful ecology background, or a desperate ecology background. However, pretesting indicated that the selected photo stimuli were problematic; no differences in life history strategy stereotypes were perceived between the young Black man and young White man when presented against a colored background. This suggests that there may have been cues to life history strategy unintentionally present in one of the faces. Additionally, the photograph conveyed age and sex information, adding additional nuance outside the scope of this research. As such, the photo manipulation was discarded in favor of the written ecology manipulation, which has been successfully utilized in previous research (e.g., Sng et al., in prep; Williams et al., 2016).

provided); a Black or White individual from a hopeful or desperate ecology (both race and ecology information provided); or simply imagined an individual (no race or ecology information provided).⁶ This information was manipulated using written descriptions of race and ecology taken from previous research (Williams et al., 2016). For example, participants in a Race X Ecology condition might be asked to “imagine a White individual who’s lived since birth in a poor, economically underdeveloped community where money and jobs are scarce and unpredictable, and opportunities are limited.” In contrast, participants in a Race-only condition might be asked to “imagine a White individual.” See Appendix B for the full set of manipulations.

Life History Strategy Stereotypes. After imagining the hypothetical individual, participants then reported their beliefs about the life history strategies of these imagined individuals using a scale developed by Williams and colleagues (2016). The scale has 20 items grouped into five components, measuring the life-history-relevant suites of sexual unrestrictedness (10 items), impulsivity (2 items), social opportunism (4 items), investment in self (2 items), and investment in children (2 items). Individual items present participants with a particular attribute, and assess participants’ beliefs that the imagined individual is likely to possess that attribute. For example, a participant is asked to report, “How likely is this person to act impulsively?” and responds on a 7-point scale (1 = Not at all likely; 7 = Extremely likely). Items are recoded as necessary such that higher numbers correspond with faster life history strategies. See Appendix C for the full

⁶ The ninth cell in this design was included for exploratory purposes beyond the scope of this research (see, e.g., Williams et al., 2016, which did not include this cell because it “provide[d] no information useful for testing our hypotheses.”). The remaining 8 cells capture my focal predictions in this research; only these cells are included in my analyses.

list of items. These items have high reliability within components (sexual unrestrictedness $\alpha = .93$; impulsivity $r = .50, p < .001$; social opportunism $\alpha = .89$; investment in self $r = .84, p < .001$; investment in children $r = .62, p < .001$); these five life history strategy components were averaged into a single life history strategy composite ($\alpha = .94$).

Crime Stereotypes. Participants were then asked to report their beliefs about the imagined individual's likelihood of committing 12 different crimes. For each crime, participants were asked, "Compared to the average person across the entire United States, how much more or less likely is this individual to commit the following act: [crime]." Responses were reported using a slider tool ranging from -50 to +50. Labels were provided at -45 ("Much less likely"), -15 ("A little less likely"), +15 ("A little more likely"), and +45 ("Much more likely").

Twelve crimes, drawn from the larger pool of crimes measured in the Pilot, were selected for use in Study 1. These crimes were selected to include four stereotypically "Black" crimes (drive-by shooting, possession of drugs with intent to sell, resisting arrest, vehicle theft), four stereotypically "White" crimes (forgery, serial killings, possession of child pornography, cybercrime), and four "Race-Neutral" crimes (statutory rape, domestic violence, animal abuse, driving under the influence of alcohol). Attention was paid to ensure that within each crime category there would also be variability in the perceived severity of the crimes, and that the average severity ratings of the "Black", "White", and "Race-Neutral" crimes were comparable. Thus, the stereotypically "Black" crimes include crimes of high and middling severity (e.g., drive-by shooting and resisting arrest, respectively), as do the stereotypically "White" crimes (e.g., serial killings and

forgery, respectively), and the “Race-Neutral” crimes (e.g., statutory rape and driving under the influence of alcohol, respectively). Additionally, the average severity ratings within race stereotypicality group were similar ($M_{\text{Black}} = 6.50$; $M_{\text{White}} = 7.10$; $M_{\text{Neutral}} = 7.18$). The crimes were presented to participants in random order.

Demographic Measures. As in the Pilot, participants reported their age, sex, religious affiliation, ethnicity/race, political affiliation, highest level of education, current household income, and subjective socioeconomic status.

Individual Difference Measures. Finally, participants completed the Motivation to Respond Without Prejudice scale (Plant & Devine, 1998) for potential use as a covariate (to reduce noise attributed to social desirability in responding). These items measure the extent to which participants are internally and externally driven to avoid appearing prejudiced. The order of the scale items presented was randomized. See Appendix D for the full list of items. After completing the Motivation to Respond Without Prejudice scale, participants were thanked for their time and debriefed.

Study 1 Results

Ecology overrides race – Williams and colleagues (2016) replication

I predicted, first, that I would replicate the findings of Williams and colleagues (2016) with respect to the items assessing life history strategy. That is, (1) participants in the Ecology-only conditions would stereotype individuals from desperate ecologies as possessing faster life history strategies than individuals from hopeful ecologies, (2) participants in the Race-only conditions would stereotype Black targets as possessing faster life history strategies than White targets, and (3) participants in the Race X Ecology conditions would stereotype Black and White targets from desperate ecologies

as possessing similarly fast life history strategies, and stereotype Black and White targets from hopeful ecologies as possessing similarly slow life history strategies.

To explore these predictions, I conducted a series of *a priori* contrasts and found that my predictions were largely supported. In the absence of race information, individuals from desperate ecologies were stereotyped as possessing faster life history strategies than individuals from hopeful ecologies ($p < .001$, $d = 1.08$; see Figure 1). Similarly, in the absence of ecology information, Black individuals were stereotyped as possessing faster life history strategies than White individuals ($p < .001$, $d = .36$). However, when both race and ecology information was provided, life history strategy stereotypes about Blacks and Whites from desperate ecologies were the same ($p = .82$), and these targets were stereotyped as possessing faster life history strategies than Blacks and Whites from hopeful ecologies ($p < .001$). Although there is a significant difference in the life history strategy stereotypes applied to Blacks and Whites in hopeful ecologies ($p = .03$, $d = .21$), it occurs because Blacks in hopeful ecologies are perceived as possessing *slower* life history strategies than Whites in hopeful ecologies.

For exploratory purposes, I examined whether this difference between Blacks and Whites within hopeful ecologies might be explained by social desirability in participants' responses. Specifically, participants concerned with appearing prejudiced might be more likely to report slow life history strategy stereotypes of Black individuals in hopeful ecologies than participants who are relatively unconcerned with appearing prejudiced, given that these slow life history stereotypes have largely positive connotations (see, e.g., Williams et al., 2016). To do so, I created a dummy variable using the White hopeful (coded "0") and Black hopeful (coded "1") conditions. I then conducted a linear

regression, regressing life history strategy stereotypes onto participants' Motivation to Respond Without Prejudice (MTRWP),⁷ dummy condition, and the interaction. Only condition was a significant predictor of participants' life history strategy stereotypes in this model ($b = -.23$, $p = .03$, overall model $R^2 = .06$), suggesting that differences between stereotypes of Black and White individuals in hopeful ecologies were not driven simply by motivations to appear unprejudiced.

I then explored whether participants' political conservatism might predict participants' life history strategy stereotypes within the Race X Hopeful Ecology conditions, given that liberals are more likely than conservatives to espouse egalitarian values and reject the derogation of outgroup members (see, e.g., Jost, Glaser, Kruglanski, & Sulloway, 2003). I utilized participants' response to the demographic item asking, "How conservative or liberal would you rate yourself overall?" (-50 = "Very Liberal"; +50 = "Very Conservative") as my measure of political ideology, and conducted a linear regression, regressing life history strategy stereotypes onto participants' political ideology, dummy condition, and the interaction. Condition was again a significant predictor of participants' reported life history strategy stereotypes ($b = -.22$, $p = .03$), but this was qualified by a marginally significant Political Ideology X Condition interaction ($b = .27$, $p = .06$, overall model $R^2 = .10$). Politically conservative participants stereotyped White and Black targets from hopeful environments similarly. However, liberal participants stereotyped Black hopeful targets as possessing somewhat slower life

⁷ Cronbach's alpha for the MTRWP scale in this sample was .69. I also explored whether the internal or external MTRWP subscales would separately predict participants' life history strategy stereotypes in this model; neither subscale was a significant predictor (both $ps > .44$), so I present findings for the overall scale here.

history strategies than White hopeful targets ($b = .25, p = .08$, overall model $R^2 = .06$).

See Figure 2. I return to these findings in the Study 1 Discussion.

In sum, replicating the effects found by Williams and colleagues (2016), I find that inferences about a target's life history strategy are largely driven by ecology, rather than race.

Figure 1. Life history strategy stereotypes as a function of manipulated ecology and race (Study 1). Error bars represent \pm SE.

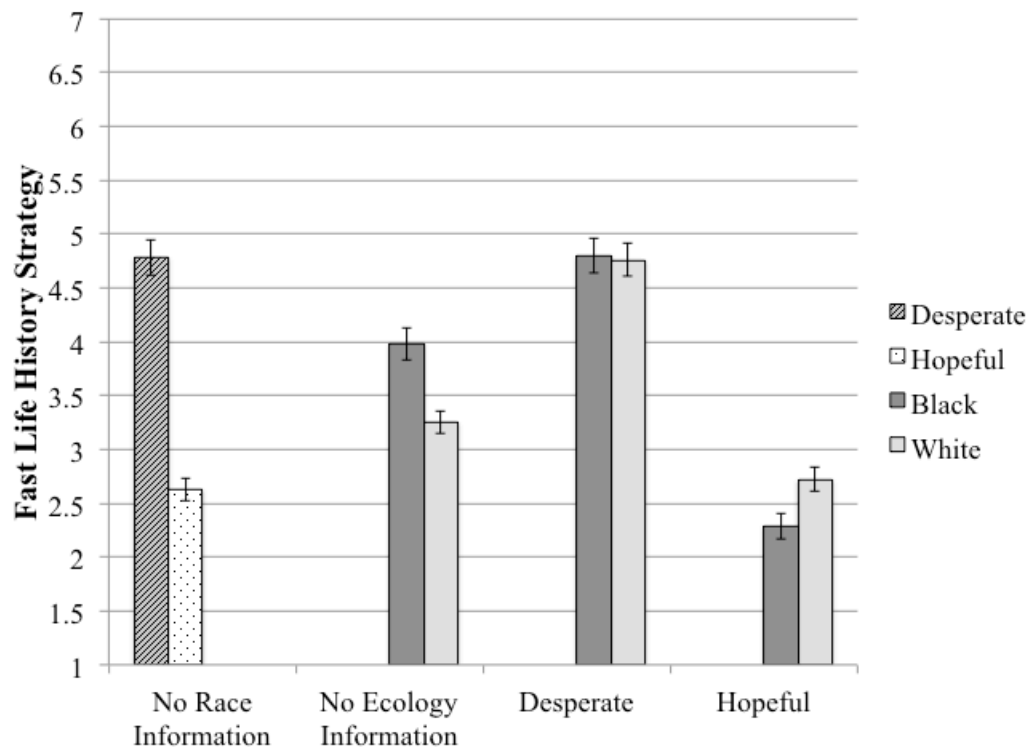
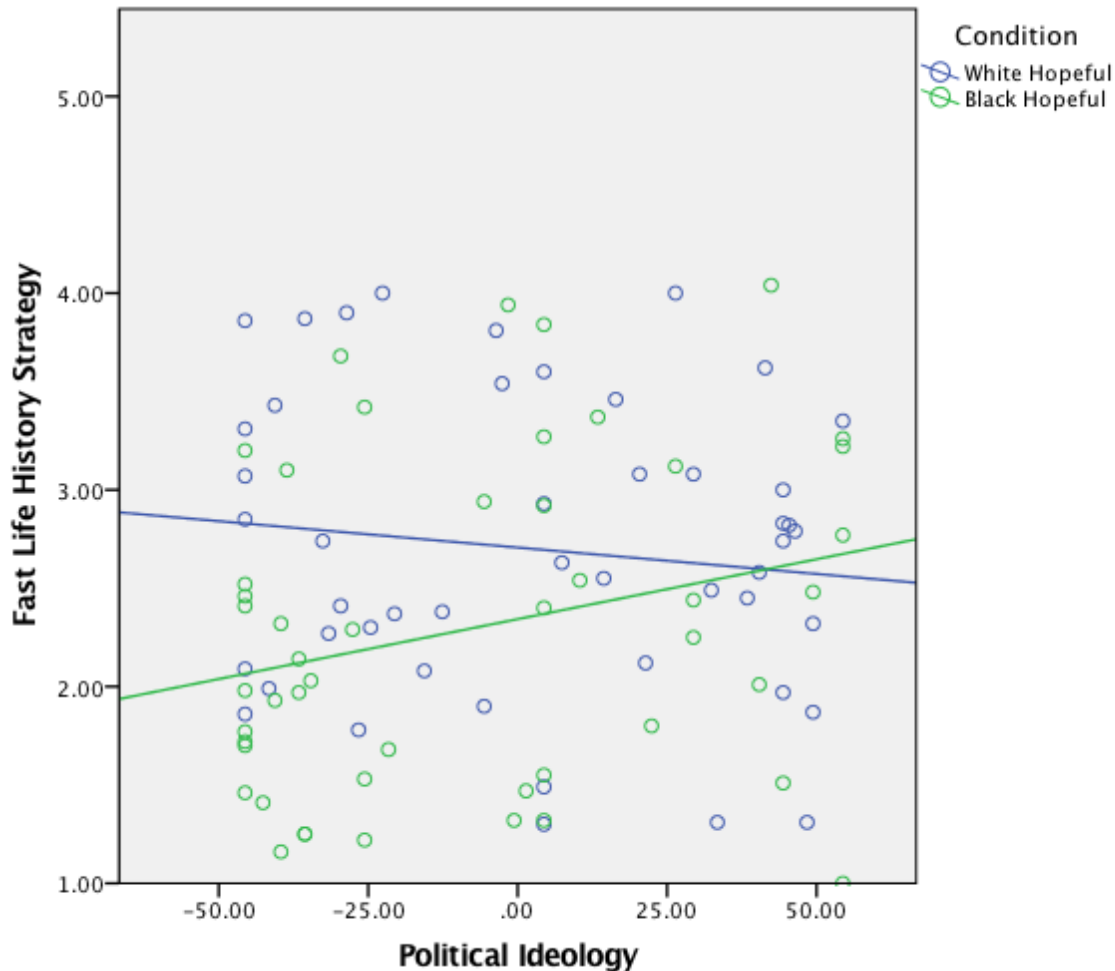


Figure 2. Life history strategy stereotypes as a function of political ideology and manipulated ecology/race (Study 1). Higher scores on political ideology indicate greater conservatism.



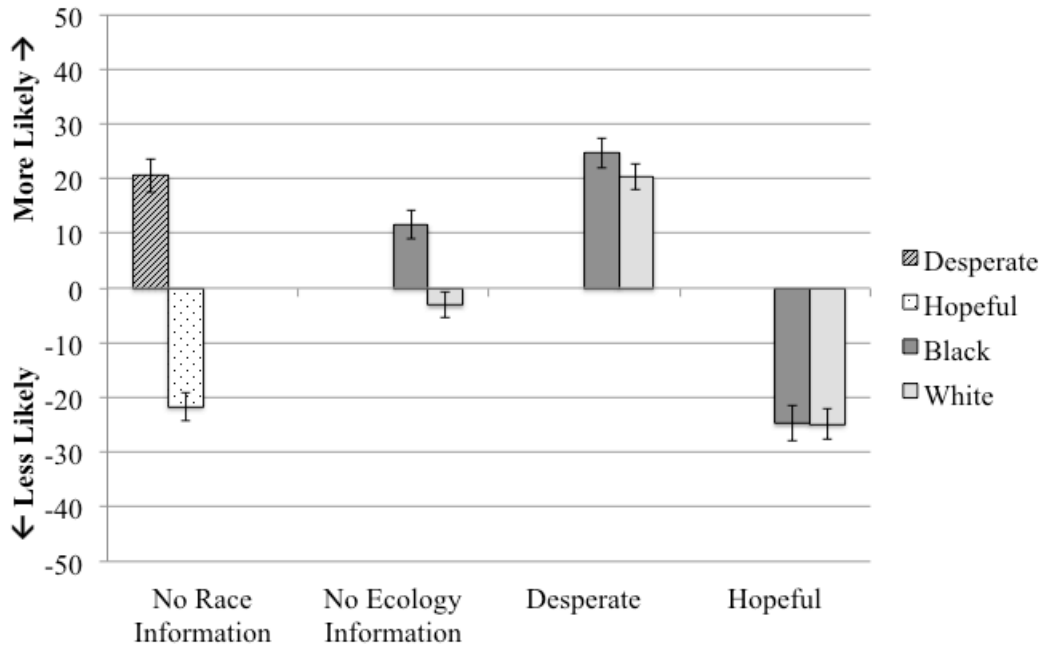
Ecology, not race, predicts beliefs about criminal engagement

I predicted, second, that beliefs about committing crimes would similarly track ecology, rather than race. Thus, I predicted that participants would view Black targets from hopeful ecologies as being highly unlikely to commit a crime that, in the absence of ecology information, is viewed as stereotypically “Black” (e.g., drug possession with intent to sell). Indeed, I predicted that *White* targets from desperate ecologies would be viewed as equally likely to commit such crimes as their Black counterparts. To test these

predictions, I conducted a series of *a priori* contrasts examining participants' beliefs about criminal engagement in the four stereotypically "Black" crimes (possession of drugs with intent to sell, vehicle theft, resisting arrest, and drive-by shooting) as a function of Race/Ecology condition. Findings were largely similar across all four crimes; here I present full results for an exemplar crime—possession of drugs with intent to sell—and note deviations from these findings within the remaining three "Black" crimes. See Appendix H for full analyses of vehicle theft, resisting arrest, and drive-by shooting, with accompanying figures.

Possession of Drugs with Intent to Sell. I first examined whether basic race stereotypes would emerge in the absence of ecology information. As suggested by the Pilot, Black targets were viewed as more likely to commit possession of drugs with intent to sell than White targets ($p < .001$, $d = .35$). I then explored whether basic ecology stereotypes would emerge in the absence of race information. As predicted, individuals from desperate ecologies were viewed as more likely to commit possession of drugs with intent to sell than individuals from hopeful ecologies ($p < .001$, $d = 1.02$). Here, the full ecology-trumping-race effect emerged as predicted: there were no differences in beliefs about likelihood to commit possession of drugs with intent to sell between Black and White individuals from desperate ecologies ($p = .27$), or between Black and White individuals from hopeful ecologies ($p = .97$). See Figure 3.

Figure 3. Perceived likelihood of committing Drug Possession with Intent to Sell as a function of race and ecology (Study 1). Error bars represent \pm SE.



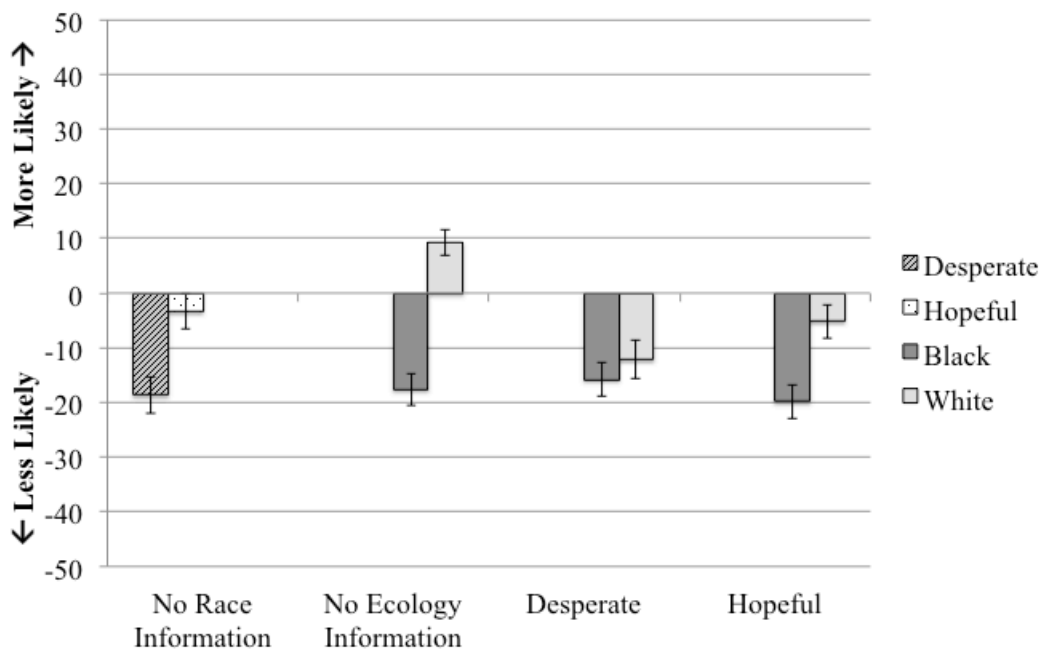
Drive-By Shooting, Resisting Arrest, and Vehicle Theft. As previously mentioned, the findings for the remaining three “Black” crimes were largely identical to the results for possession of drugs with intent to sell, with minor exceptions. With respect to vehicle theft, Blacks within desperate ecologies were seen as marginally more likely to commit vehicle theft than their White counterparts; however, this effect was not statistically significant ($p = .07$, $d = .17$). Similarly, Blacks in desperate ecologies were viewed as more likely to engage in drive-by shootings than Whites in desperate ecologies ($p = .003$, $d = .28$). However, the effect size of this difference was less than half that of the

difference between Whites and Blacks when no ecology information was provided. See Appendix H.

In contrast, one would expect that stereotypically “White” crimes would be more likely associated with hopeful ecologies, given the existing confound between Whites and hopeful ecologies (e.g., Massey, 2004; Williams et al., 2016). Yet, if beliefs about engagement in crime track ecology, rather than race, I predicted that there would also be no differences between Black and White targets from hopeful and desperate ecologies in their likelihood to commit a crime that, in the absence of ecology information, is viewed as stereotypically “White.” To test these predictions, I conducted a series of *a priori* contrasts examining participants’ beliefs about criminal engagement in the four stereotypically “White” crimes (cybercrime, forgery, serial killings, and possession of child pornography) as a function of Race/Ecology condition.

Cybercrime. Of the four stereotypically “White” crimes, only cybercrime exhibited the predicted association with both Whites and hopeful ecologies. As suggested by the Pilot study, White targets were viewed as more likely to commit cybercrime than Black targets ($p < .001$, $d = .57$). I then explored whether basic ecology stereotypes would emerge in the absence of race information. As predicted, individuals from hopeful ecologies were viewed as more likely to commit cybercrime than individuals from desperate ecologies ($p = .001$, $d = .33$). Also as predicted, no race differences emerged within desperate ecologies ($p = .42$). However, Whites in hopeful ecologies were seen as more likely to commit cybercrime than Blacks in hopeful ecologies ($p = .001$, $d = .32$). See Figure 4. I explored whether participants’ political ideology shaped these effects (and similar effects in other crimes) and report these findings in a later section, below.

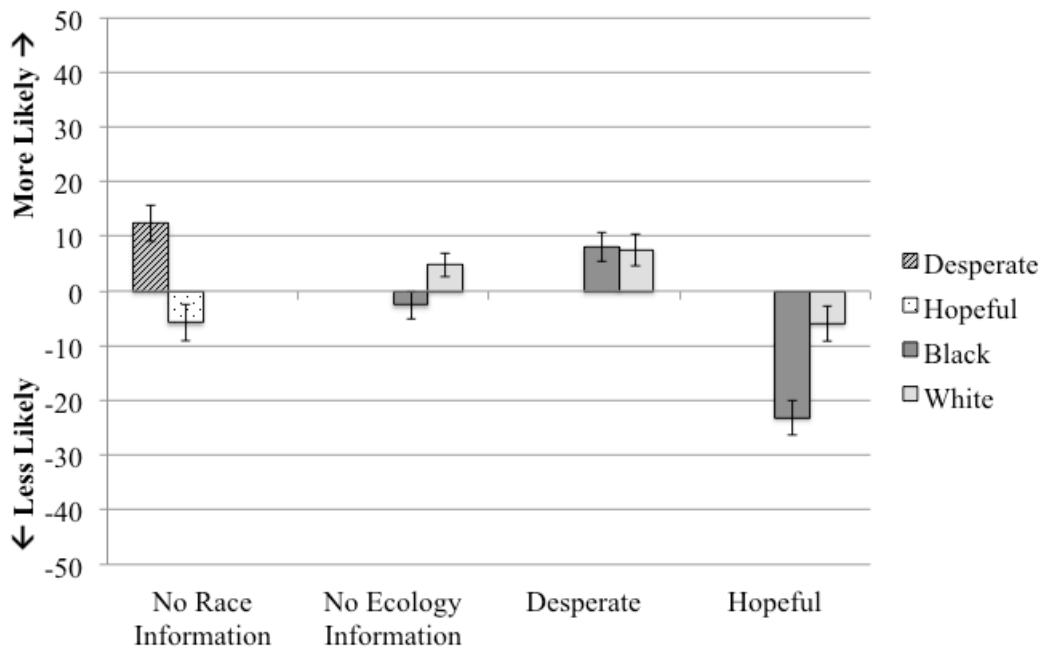
Figure 4. Perceived likelihood of committing Cybercrime as a function of race and ecology (Study 1). Error bars represent \pm SE.



Forgery. I first examined whether basic race stereotypes would emerge in the absence of ecology information. White targets were viewed as marginally more likely to commit forgery than Black targets; however, this difference was not statistically significant ($p = .09$, $d = .16$). I then explored whether basic ecology stereotypes would emerge in the absence of race information. Contrary to predictions, individuals from *desperate* ecologies were viewed as more likely to commit forgery than individuals from *hopeful* ecologies ($p < .001$, $d = .40$). As predicted, there were no differences in beliefs about likelihood to commit forgery between White and Black individuals from desperate ecologies ($p = .91$). However, White individuals from hopeful ecologies were viewed as

more likely to commit forgery than Black individuals from hopeful ecologies ($p < .001$, $d = .38$). See Figure 5.

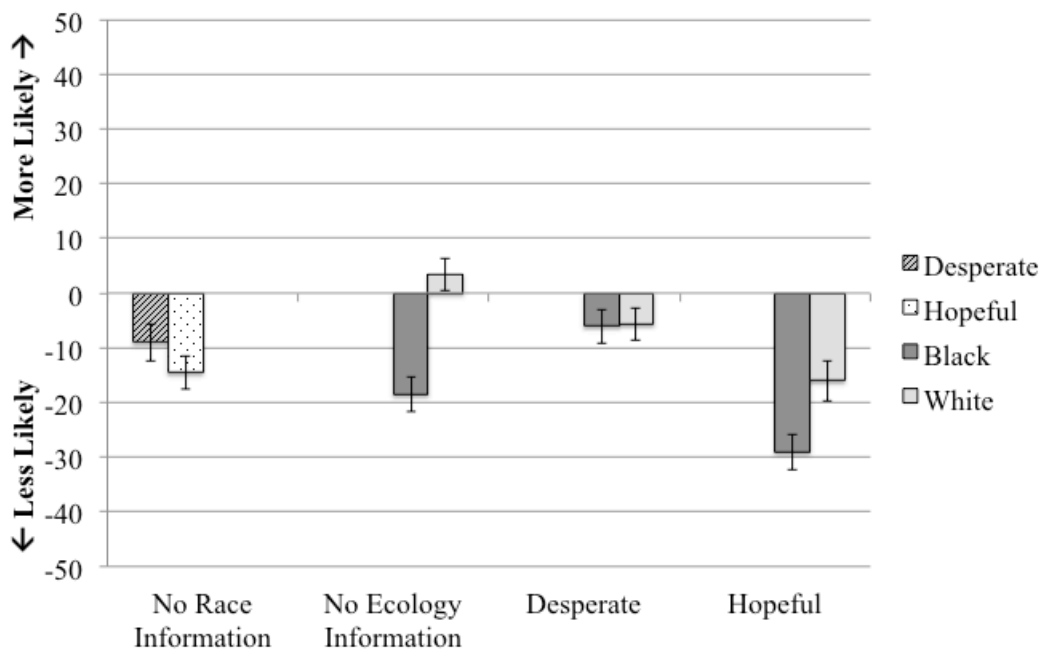
Figure 5. Perceived likelihood of committing Forgery as a function of race and ecology (Study 1). Error bars represent $\pm SE$.



Serial Killings. I again began by examining whether basic race stereotypes would emerge in the absence of ecology information. As suggested by the Pilot study, White targets were viewed as more likely to engage in serial killings than Black targets ($p < .001$, $d = .46$). I then explored whether basic ecology stereotypes would emerge in the absence of race information. Contrary to predictions, no differences emerged in perceived likelihood of individuals from desperate ecologies and hopeful ecologies to commit serial killings ($p = .22$). As predicted, there were no differences in beliefs about likelihood to

commit serial killings between White and Black individuals from desperate ecologies ($p = .94$). However, White individuals from hopeful ecologies were viewed as more likely to commit serial killings than Black individuals from hopeful ecologies ($p = .004$, $d = .27$). See Figure 6.

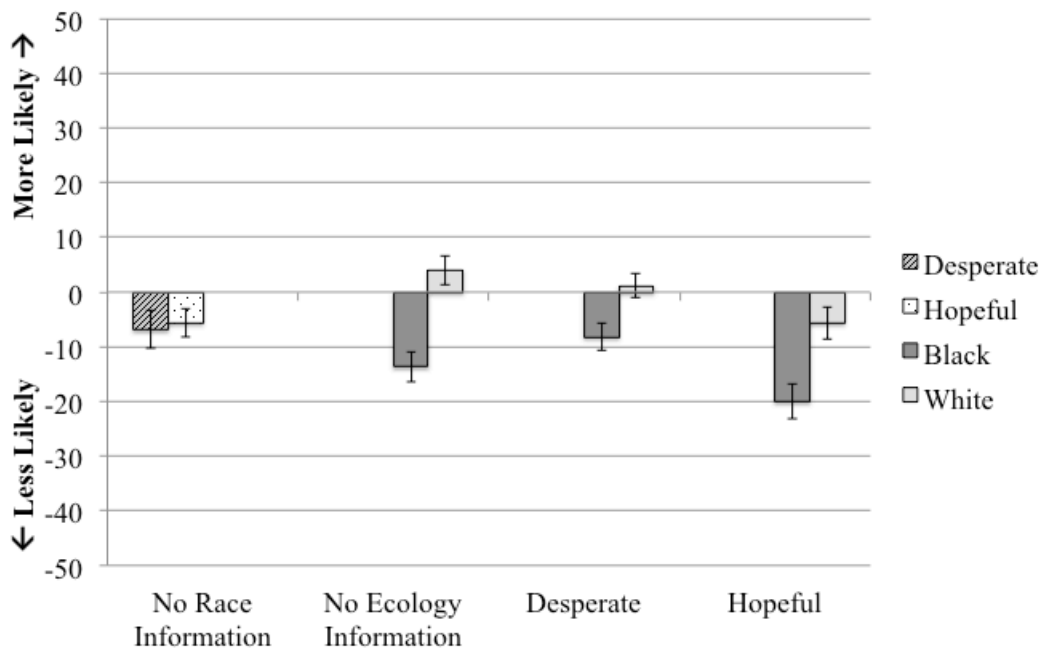
Figure 6. Perceived likelihood of committing Serial Killings as a function of race and ecology (Study 1). Error bars represent \pm SE.



Possession of Child Pornography. Again, I first explored whether basic race stereotypes would emerge in the absence of ecology information. As suggested by the Pilot study, White targets were viewed as more likely to commit possession of child pornography than Black targets ($p < .001$, $d = .41$). I then examined whether basic ecology stereotypes would emerge in the absence of race information. Contrary to

predictions, no differences emerged in perceived likelihood of individuals from desperate and hopeful ecologies to commit possession of child pornography ($p = .76$). Also contrary to predictions, race differences emerged in both desperate and hopeful ecologies—Whites in desperate ecologies were seen as more likely to commit possession of child pornography than Blacks in desperate ecologies ($p = .02$, $d = .22$), and Whites in hopeful ecologies were seen as more likely to commit possession of child pornography than Blacks in hopeful ecologies ($p < .001$, $d = .34$). See Figure 7.

Figure 7. Perceived likelihood of committing Possession of Child Pornography as a function of race and ecology (Study 1). Error bars represent \pm SE.



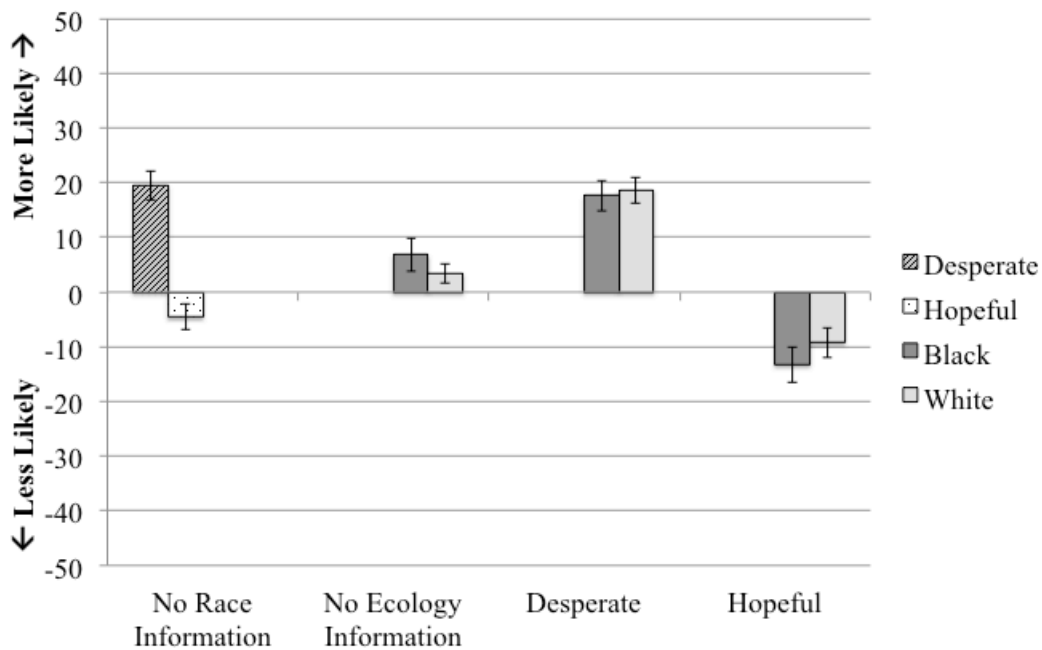
My final predictions in Study 1 explored the application of ecology information to crimes that are “Race-Neutral”—that is, not stereotypically associated with either Whites

or Blacks. For these crimes, I predicted no race differences in stereotypes of engagement; however, I predicted that these crimes would be associated with desperate ecologies (regardless of the race of individuals within those ecologies).

To test these predictions, I conducted a series of *a priori* contrasts examining participants' beliefs about criminal engagement in the four "Race-Neutral" crimes (statutory rape, domestic violence, animal abuse, and driving under the influence of alcohol) as a function of Race/Ecology condition. Findings were largely similar across three of the four crimes; here I present full results for an exemplar crime, domestic violence, and note any deviations from these findings with respect to animal abuse and statutory rape. See Appendix H for full analyses, with accompanying figures. The results from driving under the influence of alcohol did not exhibit a qualitatively similar pattern, and are therefore presented here in full.

Domestic Violence. I first explored whether basic race stereotypes would emerge in the absence of ecology information. As suggested by the Pilot study, there were no differences in perceived likelihood to commit domestic violence as a function of race ($p = .39$). I then explored whether basic ecology stereotypes would emerge in the absence of race information. As predicted, individuals from desperate ecologies were viewed as more likely to commit domestic violence than individuals from hopeful ecologies ($p < .001$, $d = .59$). Also as predicted, no race differences emerged within desperate ecologies ($p = .80$) or hopeful ecologies ($p = .30$) in perceived likelihood to commit domestic violence. See Figure 8.

Figure 8. Perceived likelihood of committing Domestic Violence as a function of race and ecology (Study 1). Error bars represent \pm SE.

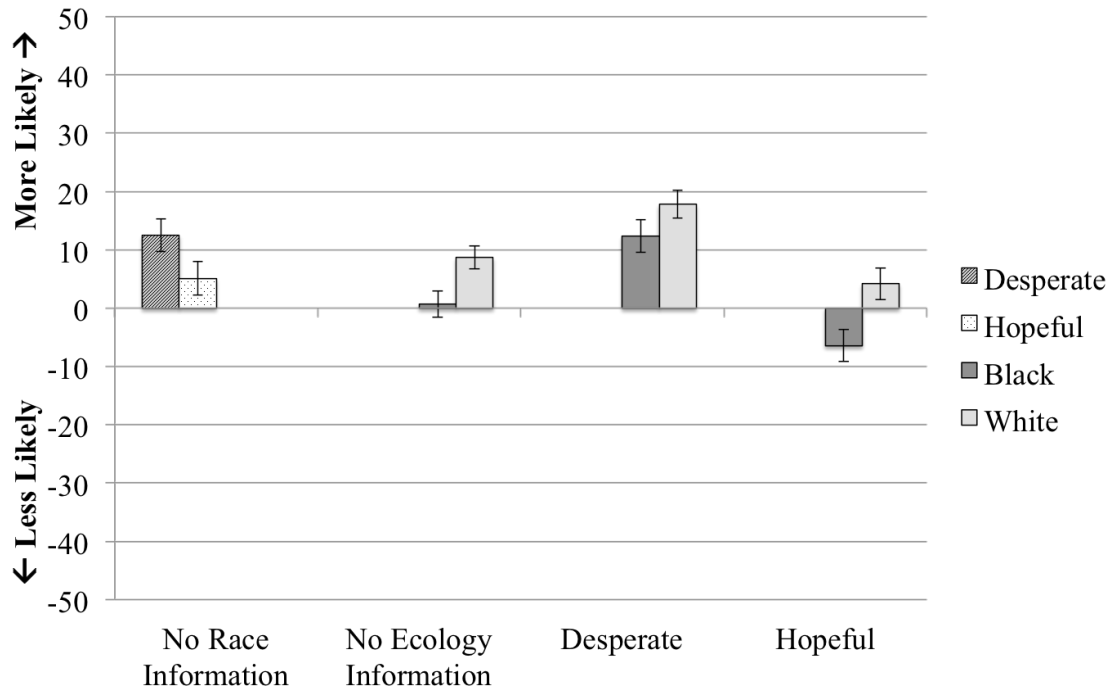


Animal Abuse and Statutory Rape. Animal abuse exhibited identical patterns to those found with domestic violence. Patterns were nearly identical for statutory rape, with the exception that Whites in hopeful ecologies were seen as more likely to commit statutory rape than Blacks in hopeful ecologies ($p = .01$, $d = .23$). See Appendix H.

Driving Under the Influence of Alcohol. Again, I first explored whether basic race stereotypes would emerge in the absence of ecology information. Contrary to predictions, White individuals were perceived as more likely to drive under the influence of alcohol than Black individuals ($p = .04$, $d = .19$). I then explored whether basic ecology stereotypes would emerge in the absence of race information. As predicted, individuals

from desperate ecologies were viewed as more likely to drive under the influence of alcohol than individuals from hopeful ecologies ($p < .05$, $d = .18$). Also as predicted, no race differences emerged within desperate ecologies ($p = .16$). However, Whites from hopeful ecologies were seen as more likely to drive under the influence of alcohol than Blacks from hopeful ecologies ($p = .006$, $d = .26$). See Figure 9.

Figure 9. Perceived likelihood of committing Driving Under the Influence of Alcohol as a function of race and ecology (Study 1). Error bars represent \pm SE.



Political ideology shapes beliefs about criminal engagement in the Black hopeful ecologies

With respect to general life history strategy stereotypes, I found that politically liberal participants stereotyped Black hopeful targets as possessing somewhat slower life history strategies than White hopeful targets, whereas politically conservative participants

stereotyped White and Black targets from hopeful environments similarly. In examining stereotypes of criminal engagement, I found several instances in which Black targets from hopeful ecologies were viewed as less likely to commit those particular crimes than White targets from hopeful ecologies. This occurred with respect to all four of the “White” crimes (cybercrime, forgery, serial killings, and child pornography) and two of the “Race-Neutral” crimes (statutory rape and driving under the influence of alcohol). I therefore explored whether these effects were similarly shaped by participants’ political ideology, by regressing stereotypes of criminal engagement onto participants’ political ideology, dummy condition, and the interaction, for each of the six crimes.

With respect to cybercrime and forgery, I found similar results to those seen for stereotypes of general life history strategy. Specifically, significant Political Ideology X Condition interactions emerged,⁸ such that conservative participants stereotyped White and Black targets from hopeful environments as similarly likely to commit cybercrime and forgery, whereas liberal participants stereotyped Black targets from hopeful environments as less likely to commit cybercrime and forgery than White targets from hopeful environments. However, this was not found with respect to serial killings, possession of child pornography, statutory rape, or driving under the influence of alcohol. In these models, only condition was a significant predictor of stereotypes of criminal engagement (all $ps < .04$). Although the observed patterns of the Political Ideology X Condition interactions were highly similar, none of the interaction terms approached statistical significance (all $ps > .15$).

⁸ Cybercrime: $b = .38, p = .01$, overall model $R^2 = .17$; Forgery: $b = .45, p = .001$, overall model $R^2 = .22$.

Study 1 Discussion

In Study 1, I examined whether stereotypes regarding likelihood to commit specific crimes were driven by beliefs about the presumed ecology of the offender, rather than the offender's race. I predicted that stereotypically "Black" crimes would exhibit no stereotyped race differences in the presence of ecology information, with both Whites and Blacks from desperate (and hopeful) ecologies stereotyped as similarly likely (or unlikely) to commit those specific crimes.

Indeed, across the four stereotypically "Black" crimes, I find that participants stereotyped Black targets as more likely to commit these crimes than White targets. However, in the presence of ecology information, these race differences disappeared or were greatly reduced. The large ecology effects found in the absence of race information across all four crimes lend support to the proposal that these crimes may not be "stereotypically Black" so much as they are "stereotypically desperate." Consistently, no differences emerged between Blacks and Whites from hopeful ecologies in their unlikelihood to engage in these crimes, and no significant differences emerged between Blacks and Whites from desperate ecologies in their likelihood to engage in each of these crimes, with the exception of drive-by shooting. With respect to stereotypes of drive-by shooting, Blacks in desperate ecologies were viewed as more likely to engage in drive-by shootings than Whites in desperate ecologies, but the effect size of this difference was less than half that of the difference between Whites and Blacks when no ecology information was provided. This suggests that, despite not *overriding* the drive-by shooting race stereotype within the Race X Desperate Ecology conditions, ecology information did *decrease* the value of the race information for perceivers. Additionally, it

is notable that Pilot findings indicated that drive-by shootings were the crimes most strongly associated with Black (as compared to White) targets, and thus offers one of the most conservative tests of the prediction.

Similar to my predictions regarding stereotypically “Black” crimes, I predicted that stereotypically “White” crimes would exhibit no stereotyped race differences in the presence of ecology information, with both Whites and Blacks from desperate (and hopeful) ecologies stereotyped as similarly likely (or unlikely) to commit those specific crimes. Contrary to the stereotypically “Black” crimes, I predicted that—in absence of race information—stereotypically “White” crimes would be associated with hopeful ecologies.

Across three of the four crimes, I find the predicted association between race and crime. Whites were viewed as more likely to commit serial killings, possession of child pornography, and cybercrime than were Blacks. The association between Whites and forgery was statistically non-significant, but trending in the predicted direction. However, contrary to predictions, only one of the four stereotypically “White” crimes—cybercrime—was associated with individuals from hopeful ecologies. Both serial killings and possession of child pornography were not significantly associated with individuals from either hopeful or desperate ecologies, and forgery was viewed as more likely to be committed by individuals from desperate, rather than hopeful, ecologies.

This is, perhaps, unsurprising, given that it is unclear from a life history perspective under what circumstances an individual possessing a slow life history strategy would engage in criminal behavior, generally, and the content of that crime, specifically. Participating in illegal activities is, by definition, “risky” behavior—and thus

more congruent with a fast life history strategy. Cybercrime, by virtue of requiring access to relatively expensive equipment (computers) and specialized knowledge, may only be a viable crime in an ecology that offers sufficient available resources for the purchase of equipment and acquisition of skills. In contrast, it is possible that individuals view possession of child pornography and serial killings as caused by mental disorder or genetic defect that is similarly likely to occur in any ecology, rather than as a behavior linked to life history strategy.

When participants were presented with both race and ecology information, the predicted ecology trumping effects emerged within desperate ecologies—that is, no race differences were observed between Whites and Blacks in likelihood to commit stereotypically “White” crimes. However, within the hopeful ecologies, Whites were viewed as more likely than Blacks to commit forgery, serial killings, possession of child pornography, and cybercrime. Rather than representing an increased likelihood of White targets engaging in these crimes, the effects are better understood in terms of a bias towards seeing Black hopeful targets as *especially unlikely* to commit these crimes.

This pattern was similar to that seen with general life history strategy stereotypes of Blacks and Whites from hopeful ecologies, wherein Black hopeful targets were stereotyped as possessing *slower* life history strategies than White hopeful targets (see Figure 1). These findings did not simply reflect motivation to control prejudice in participant responding, but were shaped in part by participants’ political ideology. One potential explanation for these findings is that liberal participants were more likely to report low-criminality stereotypes of Black targets than conservative participants, as a function of wanting to appear egalitarian and minority-friendly. However, this

explanation is somewhat unconvincing given that we do not see any differences in stereotypes of Whites and Blacks from desperate ecologies. A second possibility is that, given systemic hurdles faced by Black individuals in America that make it more difficult for Black individuals to move between ecologies (e.g., Eligon & Gebeloff, 2016), perceivers may have viewed Black individuals in hopeful ecologies as having *necessarily* adopted an especially slow life history strategy to achieve their position within that ecology. This may particularly be the case for politically liberal participants, who are perhaps more attuned to the institutional challenges faced by Black Americans (see, e.g., Zucker & Weiner, 1993). Under this possibility, perceived differences between Whites and Blacks in hopeful ecologies would not reflect social desirability in responding, but rather, actual differences in beliefs about the strategies adopted by Black individuals in hopeful ecologies as compared to White individuals in hopeful ecologies. I return to this consideration in the General Discussion.

As with my predictions regarding stereotypically “Black” and stereotypically “White” crimes, I predicted that “Race-Neutral” crimes would exhibit no stereotyped race differences in the presence of ecology information, with both Whites and Blacks from desperate (and hopeful) ecologies stereotyped as similarly likely (or unlikely) to commit those specific crimes. However, I also predicted that whereas there would be no stereotyped race differences in the absence of ecology information, ecology differences would emerge in the absence of race information.

With the exception of driving under the influence of alcohol, I find, as predicted, no race differences in beliefs of likely engagement across the “Race-Neutral” crimes. And, across all four crimes, I find the predicted ecology main effects: individuals from

desperate ecologies were viewed as more likely to engage in statutory rape, domestic violence, animal abuse, and driving under the influence of alcohol than individuals from hopeful ecologies. When both ecology and race information was provided, I find no perceived differences between Black and White targets from desperate ecologies across all four crimes. However, race differences emerged in reported beliefs about Black and White targets from hopeful ecologies with respect to statutory rape and driving under the influence of alcohol; for both crimes, White targets from hopeful ecologies were seen as more likely to commit those acts than Black targets from hopeful ecologies. These findings cohere with the ‘slower life history strategy bias’ previously demonstrated towards Blacks from hopeful ecologies in the “White” crimes, but were not significantly shaped by participants’ political ideology.

STUDY 2

Overview

In Study 1, I explored the extent to which lay beliefs about engagement in different types of crime were driven by inferences of life history strategy, rather than race. In Study 2, I extended this question to explore whether lay beliefs about recidivism—the likelihood of re-offense—are similarly driven by inferences of life history strategy, rather than race.

Study 2 Method

Participants

Three hundred and sixty-five individuals (158 female) were recruited from Amazon's Mechanical Turk and paid \$0.75 for their participation. Mean age of the participants was 37.54 ($SD = 11.45$). The majority of participants were White (78.4%). Forty percent of participants identified as Democrat, 28.5% Independent, 23.8% Republican, 5.2% Libertarian, 1.4% Green, and 1.4% other.

Materials and Procedure

Design Overview. Participants were asked to imagine a hypothetical individual and rate this individual on a series of potential recidivism predictors. As in Study 1, participants were provided with race information, ecology information, both race and ecology information, or no information about the hypothetical individual. Thus, the study had a 3 (Race [Black, White, No Information]) X 3 (Ecology [Desperate, Hopeful, No Information]) between-subjects design.

Cover Story. The study was presented on Amazon's Mechanical Turk as “an academic survey about social perception.” As in Study 1, participants were told that the

purpose of the study was to examine individuals' perceptions of various groups and individuals, and that they would be asked to rate their perceptions of different groups or individuals on sets of traits. Also as in Study 1, participants were told that they would be asked to imagine a hypothetical individual, and then asked for their impressions of this individual.

Ecology X Race Manipulation. Participants were then randomly assigned into one of nine possible conditions in which ecology and race were orthogonally manipulated. These manipulations were identical to the written descriptions used in Study 1. See Appendix B for the full set of manipulations.

Recidivism Predictors. Participants were then asked to report how likely the imagined individual was to exhibit 21 attributes, representing three categories: (1) extant recidivism predictors that capture theoretically-derived life history strategy-relevant information; (2) extant recidivism predictors that do not capture life history strategy-relevant information; and (3) filler items that are both irrelevant to life history strategy and are not extant predictors of recidivism. All items were presented in random order. Extant recidivism predictors were drawn from existing criminal justice literature (e.g., Heubner & Bynum, 2008) and official parole guidelines for evaluating release (e.g., Andrews & Bonta, 2000; Nafekh & Motiuk, 2002).

Items in the life history strategy-relevant category were the following: be married (a cue to sexual restrictedness); have completed high school (a cue to investment in education); have a college education (a cue to investment in education); be employed (a cue to impulsivity and self-investment); have received a lot of time and attention from their parents when they were a child (a cue to parental investment); exhibit low self-

control (a cue to impulsivity); have a history of substance abuse (a cue to impulsivity); have been arrested (a cue of engaging in socially opportunistic behavior); be a member of a gang (a cue of engaging in socially opportunistic behavior); have been raised in a single-parent household (a cue to parental investment); have experienced a lot of unpredictability as a child (a cue to unpredictability); have committed a crime at a young age (a cue of both impulsivity and engaging in socially opportunistic behavior); rely on social assistance (e.g., welfare, Medicaid) (a cue to resource-carrying capacity and unpredictability); change home addresses frequently (a cue to unpredictability); and live in a high crime neighborhood (a cue to unpredictability and socially opportunistic behavior). The first five items were recoded such that higher numbers on all items corresponded to a faster life history strategy. Analyses indicated high reliability across items ($\alpha = .96$); thus, items were aggregated to form a single “Life History Strategy-Relevant Recidivism Predictors” scale.

Items in the life history strategy-irrelevant category were the following: be a parent; have a mental illness; be intelligent; and have an antisocial personality. With respect to being a parent, although life history theory suggests that one’s quantity of offspring is tied to (and indicative of) life history strategy (see, e.g., Del Giudice, Gangestad, & Kaplan, 2015), whether or not one is a parent of *any* offspring does not, by itself,⁹ confer substantial information about life history strategy—that is to say, both slow and fast strategy-adopting organisms produce offspring. Thus, perceivers should not possess basic ecology-driven stereotypes about this characteristic.

⁹ If coupled with information about age—for example, whether one is a parent at age 14—parental status becomes a more useful predictor of life history strategy.

With respect to possessing a mental illness, recently, researchers have explored the relationship between life history and psychopathology (see, e.g., Del Giudice, 2016), suggesting that specific psychiatric disorders may be associated with fast or slow life histories. For example, autism is broadly categorized as a condition on the “slow” life history spectrum, whereas schizophrenia is broadly categorized as a condition on the “fast” life history spectrum (Del Giudice, 2016). However, researchers note that within a particular disorder (e.g., anorexia) there can be subtypes associated with slow and fast spectrums, respectively (e.g., a “perfectionist” subtype associated with a slow spectrum, and a “dysregulated” subtype associated with a fast spectrum) (Del Giudice, 2016). Thus, although emerging literature suggests that there may be a relationship between specific forms of mental illness and life history strategy, this relationship is highly complex and disorder-specific. I therefore predicted that social perceivers would not possess strong associations between a target’s ecology and the likelihood that the target has a mental illness, generally speaking. Similarly, I did not predict that perceivers would strongly associate an antisocial personality with a particular ecology, nor with a particular race.

With respect to the intelligence item, life history theory suggests that individuals with slow life history strategies are more likely to invest in the slow accumulation of knowledge and other forms of embodied capital (e.g., Del Giudice et al., 2015). However, the theory makes no such predictions for general intelligence. Thus, I predicted no ecology-driven differences in stereotypes of a target’s likeliness to be intelligent, broadly defined.

Items in the filler category were “own a pet” and “be an extrovert”; these items were drawn from life history strategy-irrelevant filler traits utilized in previous research

(Sng et al., in prep; Williams et al., 2016).

Demographic Measures. As in Study 1, participants reported their age, sex, religious affiliation, ethnicity/race, political affiliation, highest level of education, current household income, and subjective socioeconomic status.

Individual Difference Measures. As in Study 1, participants completed the Motivation to Respond Without Prejudice scale (Plant & Devine, 1998) for potential use as a covariate. After completing the scale, participants were thanked for their time and debriefed.

Study 2 Results

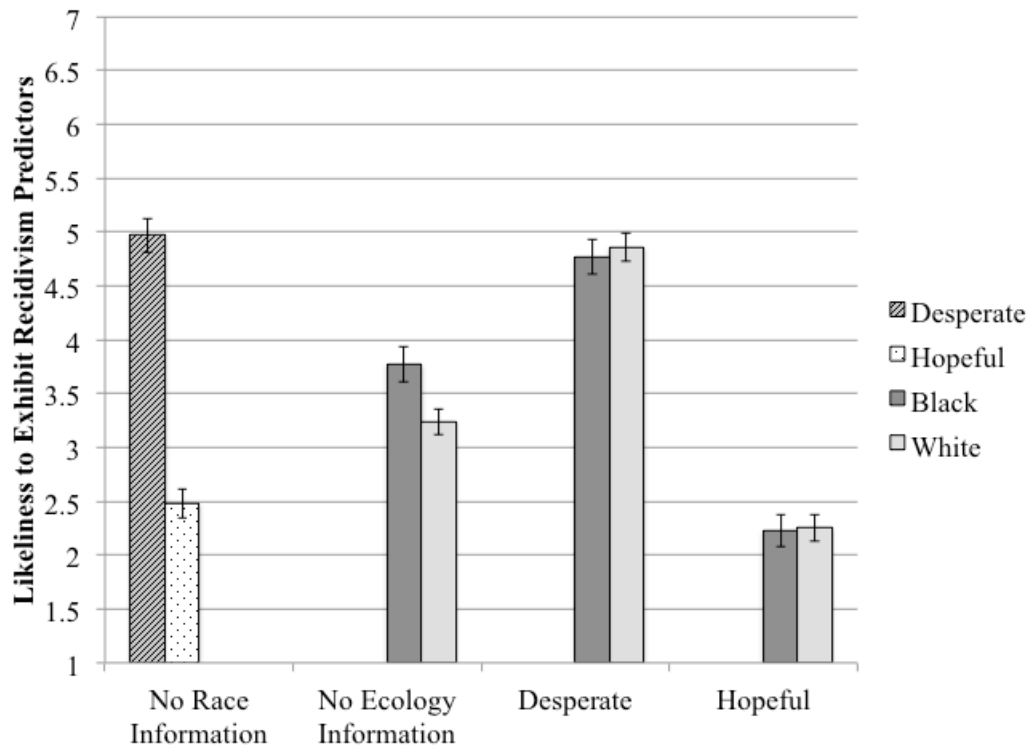
Ecology, not race, predicts beliefs about life history strategy-relevant recidivism predictors

I predicted, first, that beliefs about the life history strategy-relevant recidivism predictors would be driven by ecology, rather than race. Specifically, (1) participants in the Ecology-only conditions would stereotype targets from desperate ecologies as more likely to exhibit the life history strategy-relevant recidivism predictors than targets from hopeful ecologies. I predicted, second, that because race is used as a heuristic cue to ecology, (2) participants in the Race-only conditions would stereotype Black targets as more likely to exhibit the life history strategy-relevant recidivism predictors than White targets. However, because ecology provides more causal information about the likely life history strategy of an individual than race, and because these recidivism predictors capture information about the likely life history strategy of the target, I predicted that (3) only a main effect of ecology would emerge when both race and ecology information were presented, such that participants in the Race X Ecology conditions would stereotype

Black and White targets from desperate ecologies as similarly likely to exhibit the life history strategy-relevant recidivism predictors, and stereotype Black and White targets from hopeful ecologies as similarly unlikely to exhibit the life history strategy-relevant recidivism predictors.

To explore these predictions, I conducted a series of *a priori* contrasts. First, I examined whether, in the absence of race information, basic ecology differences emerged on the life history strategy-relevant recidivism predictors. My predictions were supported; targets from desperate ecologies were viewed as more likely to exhibit the life history strategy-relevant recidivism predictors than targets from hopeful ecologies ($p < .001$, $d = 1.31$). Second, I examined whether, in the absence of ecology information, basic race differences emerged on the life history strategy-relevant recidivism predictors scale. Again, my predictions were supported; Black targets were viewed as more likely to exhibit the life history strategy-relevant recidivism predictors than White targets ($p = .01$, $d = .28$). Critically, I predicted that in the presence of both race and ecology information, there would be no differences in likelihood to exhibit the life history strategy-relevant recidivism predictors between Black and White targets from desperate ecologies, and no differences between Black and White targets from hopeful ecologies. Indeed, this is what was found ($p = .64$ and $p = .92$, respectively). See Figure 10.

Figure 10. Perceived likelihood of exhibiting life history strategy-relevant recidivism predictors as a function of race and ecology (Study 2). Error bars represent \pm SE.



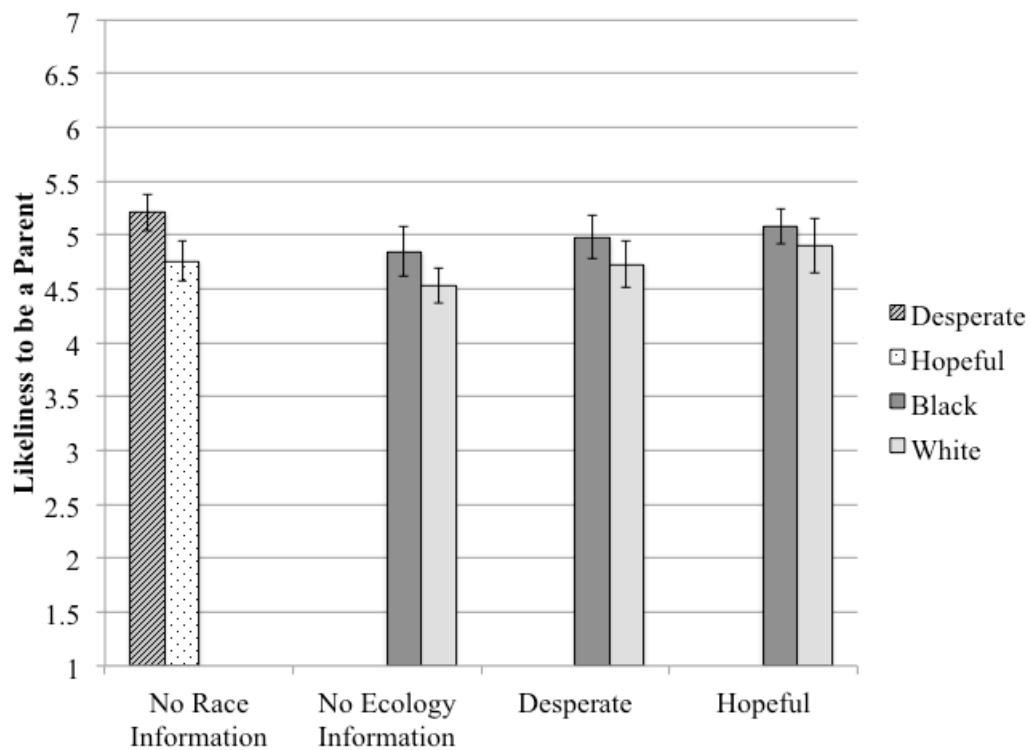
Ecology does not shape beliefs about life history strategy-irrelevant recidivism predictors

My framework suggests that ecology information is useful in predicting traits and behaviors linked to life history strategy, because the ecology of an individual actually shapes the functionality (and therefore likelihood) of adopting a particular life history strategy. Thus, perceivers are attuned to cues of ecology, and use these cues to infer the life history strategy of targets. However, to the extent that particular traits and behaviors are *not* linked to life history strategy, I would not predict that ecology information would shape beliefs about those traits and behaviors (see, e.g., Williams et al., 2016). To explore

this prediction, I ran a series of *a priori* contrasts exploring participants' beliefs about life history strategy-irrelevant recidivism predictors as a function of Race/Ecology condition.

Be a Parent. As predicted, no differences emerged in the Ecology-only conditions between targets from hopeful and desperate ecologies ($p = .13$). Similarly, no differences emerged in the Race-only conditions between Black and White targets ($p = .28$). Also as predicted, no Race X Ecology differences emerged; Black and White targets from desperate ecologies were seen as similarly likely to be a parent ($p = .41$), as were Black and White targets from hopeful ecologies ($p = .56$). See Figure 11.

Figure 11. Perceived likelihood of being a parent as a function of race and ecology (Study 2). Error bars represent \pm SE.



Have a Mental Illness and Have an Antisocial Personality. Contrary to

predictions, a significant difference emerged between the Ecology-only conditions, with targets from desperate ecologies stereotyped as more likely to have a mental illness than targets from hopeful ecologies ($p = .05$, $d = .21$), and as more likely to have an antisocial personality than targets from hopeful ecologies ($p < .001$, $d = .41$). In the Race-only conditions, Black and White targets were seen as equally likely to have a mental illness ($p = .20$), but Whites were viewed as more likely to have an antisocial personality than Blacks ($p = .006$, $d = .29$). Divergent patterns were seen in the Race X Ecology conditions. With respect to having a mental illness, Black and White targets from desperate ecologies were perceived similarly ($p = .13$), as were Black and White targets from hopeful ecologies ($p = .12$). However, White targets from desperate ecologies were seen as more likely to have an antisocial personality than Black targets from desperate ecologies ($p = .01$, $d = .27$). This difference did not emerge between White and Black targets from hopeful ecologies ($p = .46$). See Figures 12 & 13.

Figure 12. Perceived likelihood of having a mental illness as a function of race and ecology (Study 2). Error bars represent \pm SE.

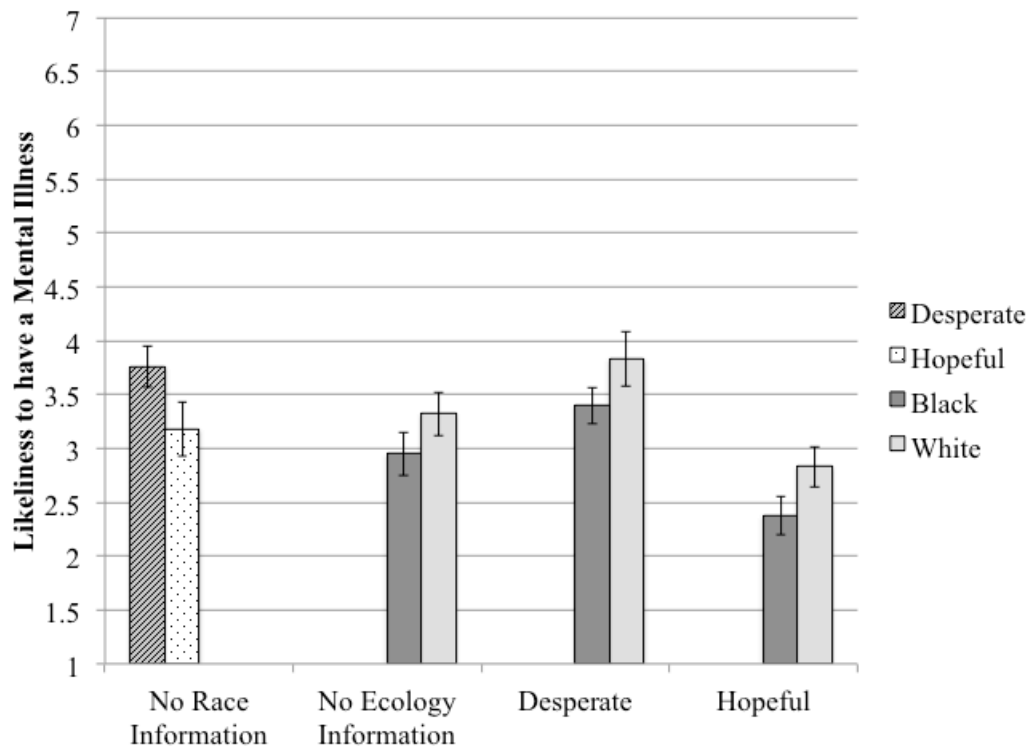
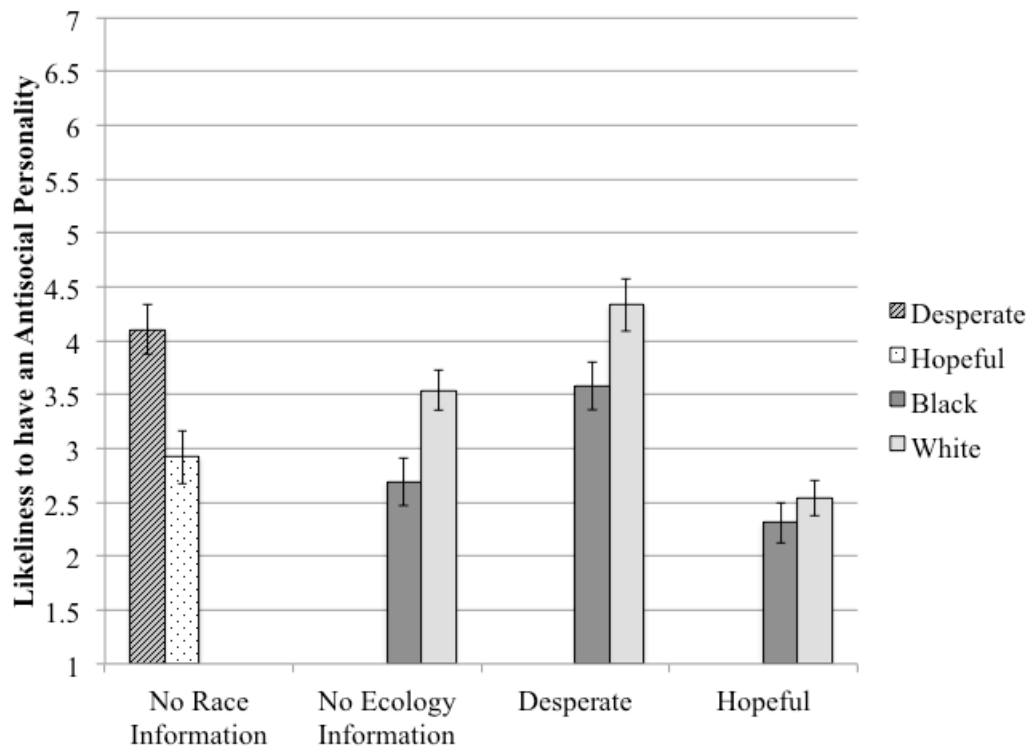
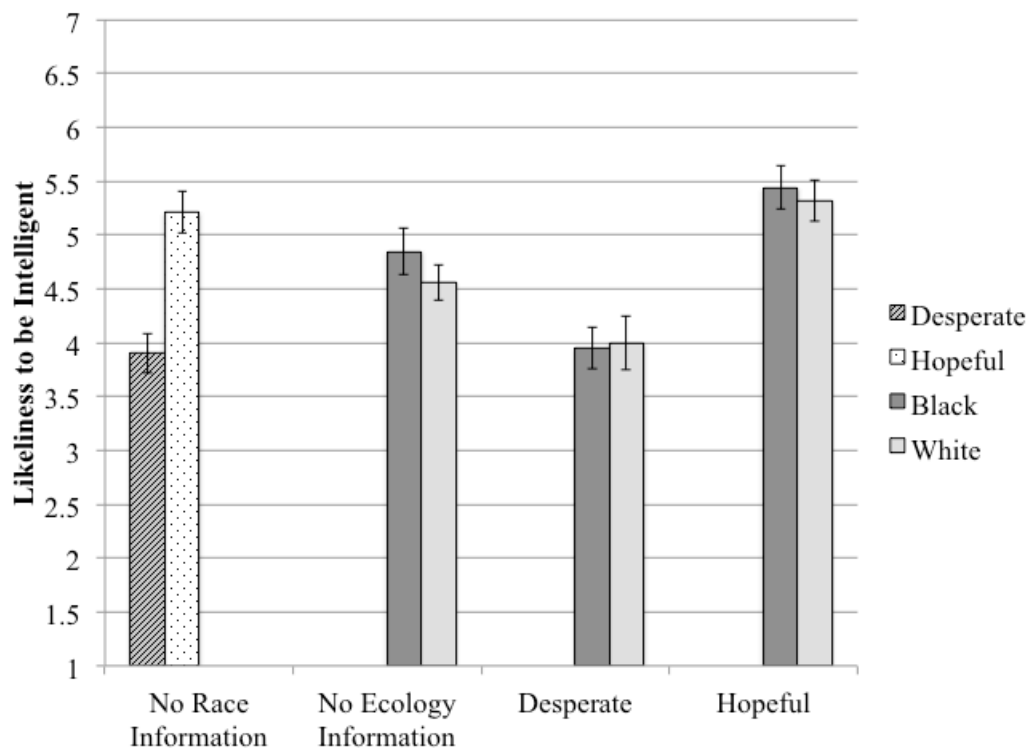


Figure 13. Perceived likelihood of having an antisocial personality as a function of race and ecology (Study 2). Error bars represent \pm SE.



Be Intelligent. Contrary to predictions, in the absence of race information, participants viewed targets from hopeful ecologies as more likely to be intelligent than targets from desperate ecologies ($p < .001$, $d = .49$). No such differences emerged in the Race-only conditions ($p = .32$), or in the Race X Ecology conditions (within desperate ecologies, $p = .86$; within hopeful ecologies, $p = .68$). See Figure 14.

Figure 14. Perceived likelihood of being intelligent as a function of race and ecology (Study 2). Error bars represent \pm SE.



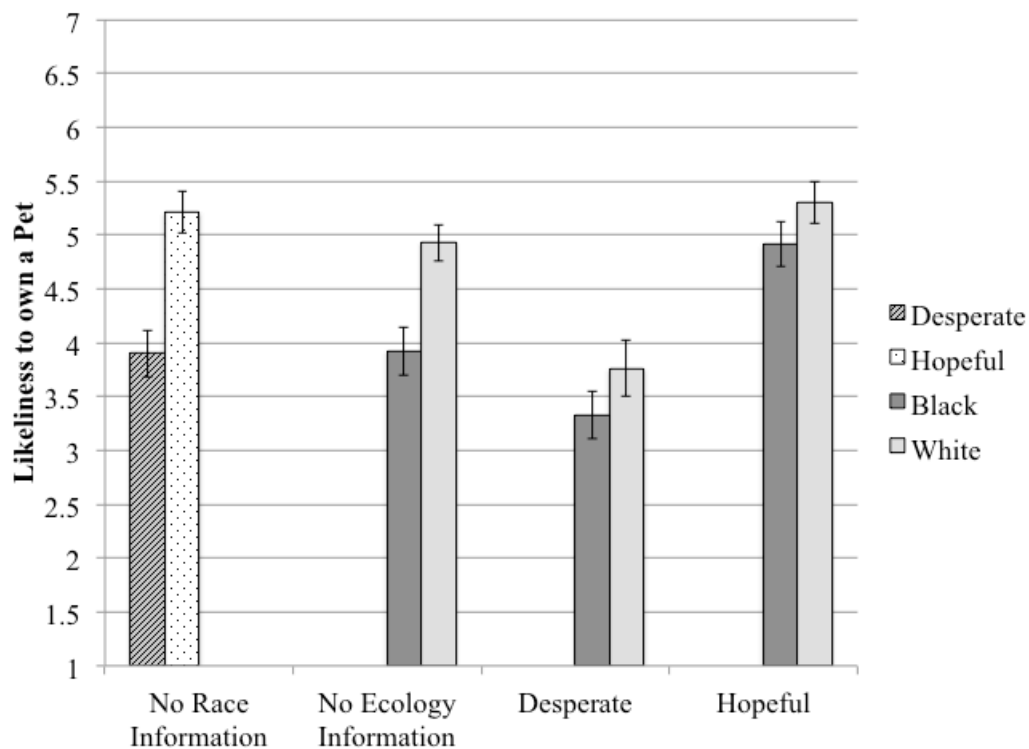
Ecology does not shape beliefs about life history strategy-irrelevant filler items

To further test the hypothesis that ecology information would only shape recidivism predictors relevant to life history strategy, I included two filler items that are neither extant recidivism predictors, nor relevant to life history strategy. I predicted that there would be no ecology or Race X Ecology differences in responses to either item. I conducted a series of *a priori* contrasts to test these predictions.

Own a Pet. I first examined whether basic ecology differences emerged, in the absence of race information. Contrary to predictions, participants stereotyped individuals from hopeful ecologies as more likely to own a pet than participants from desperate ecologies ($p < .001$, $d = .46$). Similarly, in the absence of ecology information,

participants stereotyped White targets as more likely to own a pet than Black targets ($p = .001$, $d = .36$). However, no differences emerged between White and Black targets from desperate ecologies ($p = .14$), nor between White and Black targets from hopeful ecologies ($p = .22$). See Figure 15.

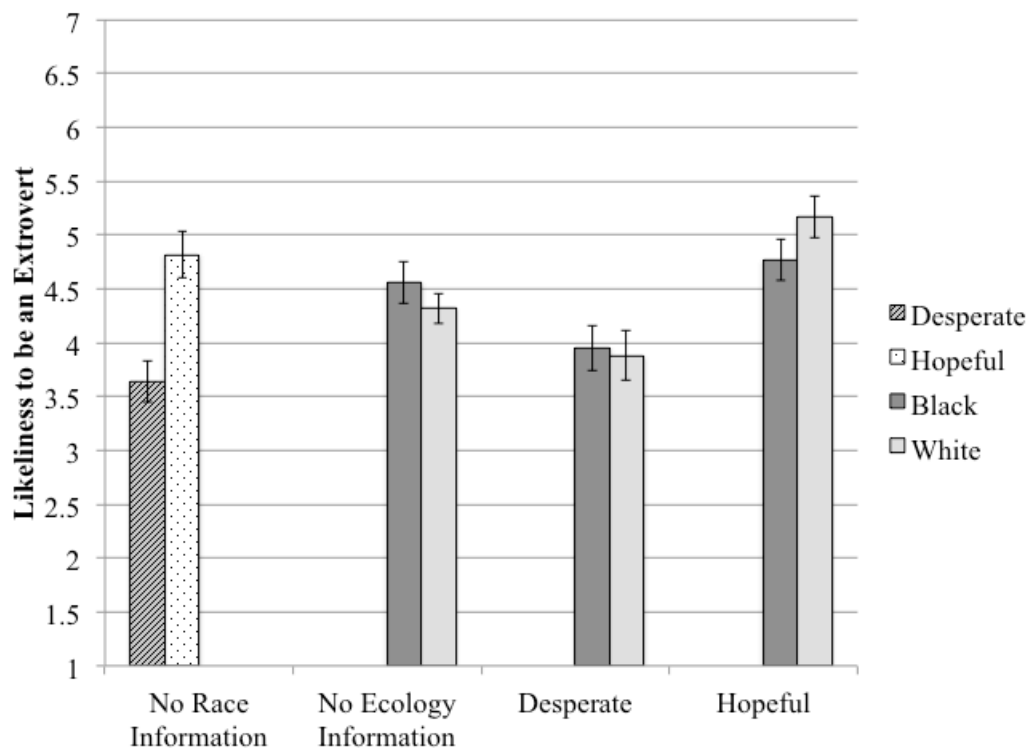
Figure 15. Perceived likelihood of owning a pet as a function of race and ecology (Study 2). Error bars represent \pm SE.



Be an Extrovert. I again explored whether, in the absence of race information, basic ecology differences emerged. Contrary to predictions (and findings from previous research—e.g., Sng et al., in prep; Williams et al., 2016), participants stereotyped individuals from hopeful ecologies as more likely to be an extrovert than individuals from desperate ecologies ($p < .001$, $d = .44$). In the absence of ecology information, no

race differences emerged ($p = .38$). Additionally, no differences emerged between White and Black targets from desperate ecologies ($p = .80$), nor between White and Black targets from hopeful ecologies ($p = .15$). See Figure 16.

Figure 16. Perceived likelihood of being an extrovert as a function of race and ecology (Study 2). Error bars represent \pm SE.



Study 2 Discussion

In Study 2, I examined whether lay beliefs of recidivism reflect inferences of life history strategy, and thus track ecology rather than race. I find that in the absence of ecology information, participants stereotyped Black targets—compared to White targets—as more likely to exhibit recidivism predictors described in extant criminal

justice literature and used by parole boards to evaluate release. However, these race stereotypes about life history strategy-relevant recidivism characteristics appear to actually reflect underlying beliefs about ecology. Participants strongly associated these recidivism predictors with targets from desperate ecologies as compared to targets from hopeful ecologies. And, when both ecology and race information was presented, race stereotypes on these characteristics disappeared.

Additionally, I find evidence that social perceivers do not apply ecology-driven stereotypes to all possible recidivism predictors. As hypothesized, social perceivers did not apply ecology-driven stereotypes in assessing whether a target is likely to be a parent. However, contrary to predictions, participants viewed targets from desperate ecologies as having an increased likelihood of possessing a mental disorder, generally, and an antisocial personality, specifically, as compared to targets from hopeful ecologies. Additionally, participants viewed targets from hopeful ecologies as more likely to be intelligent than participants from desperate ecologies. Recent work suggesting that certain mental disorders are linked to life history strategy (Del Giudice, 2016) may help to explain why perceivers associated mental illness and antisocial personality with individuals from desperate ecologies more so than individuals from hopeful ecologies. With respect to the intelligence item, it is possible that perceivers were equating intelligence with accumulated knowledge—a strong cue to slow life history strategy—rather than general intelligence, as intended.

Also contrary to predictions, both filler traits (owning a pet and being extroverted) were significantly associated with hopeful ecologies. Owning a pet was also significantly associated with Whites as compared to Blacks, although no Race X Ecology effects

emerged for either trait. These findings are unexpected, given previous and ongoing work in which these items failed to produce ecology or race stereotypes (e.g., Sng et al., in prep; Williams et al. 2016). It seems likely that the differences observed here are artifacts of this particular sample.

STUDY 3

Overview

In Study 2, I explored whether lay beliefs concerning extant predictors of recidivism track ecology rather than race. In Study 3, I extended this question to examine whether, when constrained by limited access to information, individuals would prioritize more causal life history strategy-relevant information (such as home ecology) over heuristic life history strategy-relevant information (such as race) when evaluating an inmate's likelihood of re-offense upon parole.

Study 3 Method

Participants

Three hundred and five individuals (133 female) were recruited from Amazon's Mechanical Turk and paid \$1.00 for their participation. Mean age of the participants was 34.88 ($SD = 10.51$). The majority of participants were White (72.5%). Forty-five percent of participants identified as Democrat, 25.6% Independent, 21% Republican, 4.9% Libertarian, 1.6% Green, and 2% other.

Materials and Procedure

Design Overview. Participants were asked to imagine that they were serving as a member of a parole board tasked with determining whether to release a particular inmate. Participants were told that the inmate had been convicted of one of six possible crimes (randomly assigned). Two crimes were stereotypically "Black" crimes, two were stereotypically "White" crimes, and two were "Race-Neutral." Participants then allocated points towards different kinds of information depending on its perceived importance for making their decision. Participants also ranked 13 possible types of information as a

function of its perceived importance.

Cover Story. As with Studies 1 and 2, Study 3 was presented on Amazon's Mechanical Turk as "an academic survey about social perception." Also as in Studies 1 and 2, participants were told that the purpose of the study was to examine individuals' perceptions of various groups and individuals, and that they would be asked to rate their perceptions of different groups or individuals on sets of traits.

Participant Task Instructions. Participants were first asked to imagine themselves as a member of a parole board, deciding whether or not to release a specific inmate. The instructions emphasized that the participants' primary responsibility was concluding whether, if released, the particular inmate was likely to commit the same crime again. Before being told which crime the inmate had committed, participants viewed the 13 possible types of information about the inmate that they would potentially have access to in making their decision. Participants were then told that they would be presented with a random combination of the different kinds of information, and would allocate points to indicate the perceived importance of the various types of information. See Appendix F for the complete set of instructions used in Study 3.

Crime Manipulation. After reading the instructions, participants were informed which crime the inmate had committed (e.g., "The inmate committed the following crime: vehicle theft"). The crime presented to the participant was randomly assigned. Following findings from the Pilot and Study 1, six crimes were selected as a function of their race stereotypicality. The stereotypically "Black" crimes were possession of drugs with intent to sell and vehicle theft. The stereotypically "White" crimes were forgery and cybercrime. The "Race-Neutral" crimes were domestic violence and animal abuse. In

selecting crimes, average severity ratings of the crimes (as found in the Pilot) within each race stereotypicality condition were examined to ensure that race stereotypicality and severity were not confounded ($M_{\text{Black}} = 6.06$; $M_{\text{White}} = 6.26$; $M_{\text{Neutral}} = 7.22$).

Recidivism Predictor Information. Participants were told they would have access to different kinds of information about the inmate under consideration, and viewed a list of 13 possible types of information (e.g., “The person’s number of previous convictions”; “The age at which the person was arrested”) (see Appendix G for the full list of items). These items were primarily taken from the recidivism predictors used in Study 2, with the addition of new focal items: “The person’s ethnicity/race” and “Whether the person grew up in a poor, unpredictable environment versus a wealthy, predictable environment.”

Clustered Traits. Participants were told that they would be presented with a random combination of the different kinds of information. In reality, participants viewed the same four clusters of traits in order. Within each cluster, presentation order of traits was randomized.

Above each cluster of traits, participants received instructions asking them to imagine that they had 100 points to allocate to different kinds of information that they would want to know to “most accurately predict whether or not the hypothetical inmate is likely to commit the offense again if released.” Participants were asked to distribute their 100 points to represent the importance of each of the kinds of information, giving the most points to the most important information, and the least points to the least important information. Participants could give 0-100 points to any single type of information, but the total number of points allocated must have equaled 100.

The first cluster contained the following traits: the age at which the person was

arrested; the person's number of previous convictions; whether the person is a parent; and the person's score on an introversion/extroversion personality scale. This cluster was a filler cluster intended to familiarize the participants with the task.

The second cluster contained the following traits: the age at which the person was arrested; the person's ethnicity/race; whether the person is a parent; and the person's score on an introversion/extroversion personality scale. This cluster provided a baseline measure of the number of points allocated towards race information.

The third cluster contained the following traits: the age at which the person was arrested; whether the person grew up in a poor, unpredictable environment versus a wealthy, predictable environment; whether the person is a parent; and the person's score on an introversion/extroversion personality scale. This cluster provided a baseline measure of the number of points allocated towards ecology information.

The fourth cluster contained the following traits: the age at which the person was arrested; whether the person grew up in a poor, unpredictable environment versus a wealthy, predictable environment; whether the person is a parent; and the person's ethnicity/race. This cluster permitted direct comparison between number of points allocated towards race and ecology information.

Ranking Traits. Participants were then presented with the full list of 13 possible types of information, including the two focal traits: the person's ethnicity/race and whether the person grew up in a poor, unpredictable environment versus a wealthy, predictable environment. See Appendix G for the full list of items. Participants were asked to rank the importance of each type of information, with 1 being the information that was most important for them to know, and 13 being the information that was least

important for them to know, in order to accurately determine whether the inmate is likely to reoffend. Participants could click and drag individual items into their desired rank order.

Demographic Measures. As in Studies 1 and 2, participants reported their age, sex, religious affiliation, ethnicity/race, political affiliation, highest level of education, current household income, and subjective socioeconomic status.

Individual Difference Measures. As in Studies 1 and 2, participants completed the Motivation to Respond Without Prejudice scale (Plant & Devine, 1998) for potential use as a covariate (to reduce noise attributed to social desirability in responding). The order of the scale items presented was randomized. Participants were then thanked for their time and debriefed.

Study 3 Results

In the absence of ecology information, race information is used to predict recidivism

I predicted, first, in the absence of ecology information, participants would allocate a large proportion of their points to seek information related to the inmate's race. Further, I predicted that this effect would be greater for participants in the Race-Neutral conditions. To explore these predictions, I conducted a 2 (Race-Crime Stereotypicality Condition: Race-Stereotypical [Drug Possession with Intent to Sell, Vehicle Theft, Forgery, Cybercrime], Race-Neutral [Domestic Violence, Animal Abuse]) X 2 (Sex: Male, Female) univariate Analysis of Variance (ANOVA) using number of points allocated to race in Cluster 2 as my dependent variable.

My predictions were not supported. Participants allocated a similar amount of points to race information regardless of whether the inmate's crime was Race-

Stereotypical or Race-Neutral ($p = .94$).¹⁰ There was, however, a significant main effect of sex, such that females ($M = 9.18$, $SD = 12.06$) allocated significantly fewer points towards race information than males ($M = 14.63$, $SD = 17.78$), $F(1, 299) = 6.53$, $p = .01$, partial $\eta^2 = .02$. There was no significant Race Stereotypicality X Sex interaction ($p = .34$).

I thus collapsed across conditions when examining participants' proportion of points allocated towards race information in Cluster 2. Contrary to predictions, participants allocated the *least* amount of points on average towards race information ($M = 12.25$, $SD = 15.74$) as compared to the other types of available information; see Table 2. Rather, participants allocated the greatest number of points towards information about the age at which the inmate was arrested ($M = 43.77$, $SD = 24.51$).

To explore whether the low number of points allocated towards race might reflect social desirability in participants' responding, I first examined whether participants' score on the Motivation to Respond Without Prejudice (MTRWP) scale¹¹ was a significant predictor of the number of points allocated towards race information in Cluster 2. To explore this possibility, I conducted a linear regression, regressing the number of points allocated to race in Cluster 2 onto MTRWP, participant sex, and the interaction.

Participant sex remained a significant predictor ($b = .18$, $p = .002$), but no main effect of MTRWP ($p = .92$) and no significant MTRWP X Sex interaction ($p = .11$) emerged.

¹⁰ A follow-up ANOVA examining the effect of crime condition, broadly speaking, produced similarly null results ($p = .55$), suggesting that type of crime did not influence the amount of points participants allocated towards discovering race information about the inmate.

¹¹ Cronbach's Alpha for the scale in this sample was .73.

Although not statistically significant, the interaction was trending such that males with lower MTRWP allocated more points towards race information in Cluster 2 than did males with higher MTRWP. In contrast, females allocated a similar number of points towards race information, regardless of MTRWP.¹²

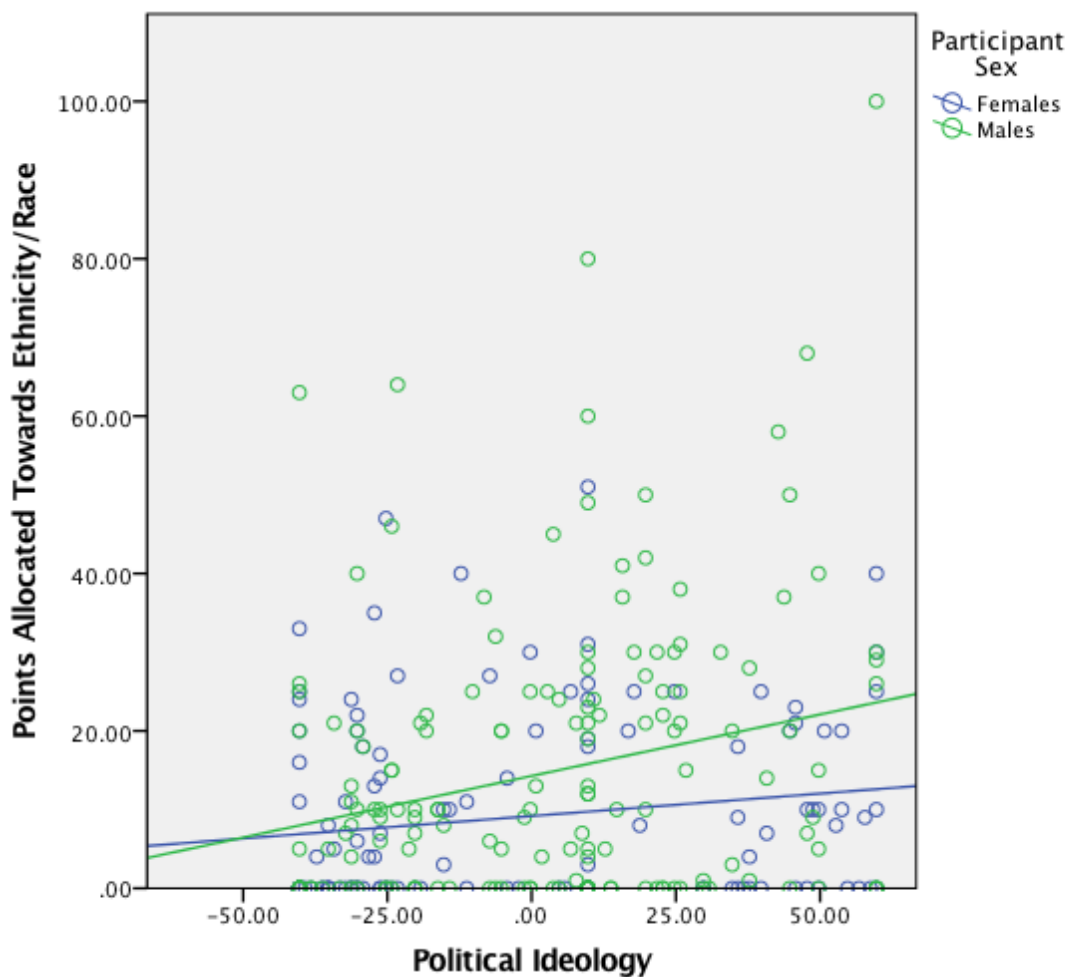
I also explored whether participants' political ideology was a significant predictor of the number of points allocated towards race in Cluster 2, predicting that liberal participants would allocate fewer points towards race than conservative participants. As a measure of political ideology, I again utilized participants' response to the demographic item asking, "How conservative or liberal would you rate yourself overall?" (-50 = "Very Liberal"; +50 = "Very Conservative"). I then conducted a linear regression, regressing the number of points allocated to race in Cluster 2 onto political ideology, sex, and the interaction.

There was no main effect of political ideology on number of points allocated towards race information in Cluster 2 ($p = .14$). The significant effect of sex persisted ($b = .16, p = .004$, overall model $R^2 = .08$). However, this was qualified by a marginally significant Political Ideology X Sex interaction ($b = .16, p = .08$). In males, political ideology was a significant predictor of number of points allocated towards race in Cluster 2, such that conservative males allocated a higher number of points towards race information than liberal males ($b = .247, p = .001$, overall model $R^2 = .06$). This pattern was also present in females, but was weaker and marginally statistically significant ($b = .03, p = .06$, overall model $R^2 = .03$). See Figure 17. As another way of exploring these

¹² Females in this sample also reported, on average, higher MTRWP ($M = 4.64, SD = .81$) than did males ($M = 4.34, SD = .97$), $t(283) = -2.36, p = .02, d = .28$.

findings, I categorized participants as “liberal” or “conservative” using a ± 1 standard deviation criterion, and find that conservative participants allocated significantly more points towards information about the inmate’s ethnicity/race than did liberal participants, $t(121) = -3.63, p < .001, d = .66$.

Figure 17. Number of points allocated to information about the inmate’s ethnicity/race as a function of participant sex and political ideology (Study 3). Higher scores on political ideology indicate greater conservatism.



In the absence of race information, ecology information is used to predict recidivism

I predicted, first, in the absence of race information, participants would allocate a

substantial proportion of their points to information about the inmate's childhood environment (i.e., the most proximate indicator of ecology—and thus of life history strategy—available to the participant). Given that ecology is a more direct cue of life history strategy than race, I also predicted that the amount of points allocated to ecology information in Cluster 3 would be significantly greater than the amount of points allocated to race in Cluster 2.

To examine these predictions, I began by conducting a 6 (Race-Crime Type: Possession of Drugs with Intent to Sell, Vehicle Theft, Forgery, Cybercrime, Domestic Violence, Animal Abuse)¹³ X 2 (Sex: Male, Female) univariate Analysis of Variance (ANOVA) using number of points allocated to ecology in Cluster 3 as my dependent variable. This was done to explore whether point allocation towards ecology would vary as a function of crime type (which did not occur with race in Cluster 2) and sex (which did occur with race in Cluster 2).

No significant effects of condition or sex were anticipated. Indeed, findings indicated that neither crime type, sex, nor the interaction of crime type and sex significantly predicted the number of points participants allocated towards ecology information in Cluster 3 (all $ps > .17$). Because crime type did not affect participants' token allocation towards race (Cluster 2) or ecology (Cluster 3) information, all proceeding analyses collapse responses across crime condition.

I next examined the proportion of points participants allocated towards ecology information in the absence of race information. As predicted, participants allocated a

¹³ Given that all six crimes were demonstrated to be associated with a particular ecology in Study 1, I did not group crime type into 'ecology-stereotypical' and 'ecology-neutral' as was done for race stereotypicality.

substantial number of their points towards ecology information ($M = 32.32$, $SD = 20.41$); see Table 2. Paired samples t-tests revealed that the amount of points allocated towards ecology information was significantly greater than the amount allocated towards information about whether the person is a parent, $t(304) = 9.61$, $p < .001$, $d = 1.10$, and the person's score on an introversion/extroversion personality scale, $t(304) = 8.67$, $p < .001$, $d = .99$. The amount of points allocated towards ecology information in Cluster 3 was not significantly different from the amount of points allocated towards the age at which the person was arrested ($p = .43$).

I then compared the number of participants' points allocated towards ecology in Cluster 3 with the amount of points allocated towards race in Cluster 2. As predicted, participants allocated a significantly greater number of points towards ecology as compared to race when these types of information were presented separately, $t(304) = 13.87$, $p < .001$, $d = 1.59$.

For exploratory purposes, I examined whether political ideology significantly predicted number of points allocated towards ecology in Cluster 3, given that it added explanatory information to the number of points participants allocated towards race in Cluster 2. This was done by regressing number of points allocated towards ecology onto participants' political ideology. Findings indicated that political ideology did significantly predict the number of points allocated towards ecology in Cluster 3, but in the opposite direction as with race: more liberal participants allocated a greater number of points to ecology than conservative participants ($b = -.12$, $p = .04$, overall model $R^2 = .01$).

In the presence of both race and ecology information, ecology information overrides the use of race for predicting recidivism

My first prediction was that, despite the availability of race information, participants would allocate a substantial proportion of their points towards ecology information. Second, I predicted that ecology information would receive a greater number of points than race information when both types of information were available, and that this would reflect a reduction in the number of points allocated towards race as compared to those in Cluster 2.

To examine these predictions, I first conducted an independent samples t-test to explore whether sex differences again emerged in the number of points allocated towards race in Cluster 4. As before, a significant sex difference was found: males, as compared to females, allocated a significantly higher number of points towards race information ($M_{\text{male}} = 13.19$, $SD_{\text{male}} = 15.71$; $M_{\text{female}} = 8.76$, $SD_{\text{female}} = 11.91$), $t(301) = 2.70$, $p = .01$, $d = .31$. I again explored whether motivation to respond without prejudice (MTRWP) predicted participants' number of points allocated towards race, despite its lack of predictive power in Cluster 2. To do so, I conducted a linear regression in which I regressed the number of points allocated towards race in Cluster 4 onto participants' MTRWP, sex, and the interaction. Only participant sex was a significant predictor in this model ($b = .16$, $p = .01$, overall model $R^2 = .04$) (all other $ps > .57$).

I similarly explored whether political ideology affected the number of points allocated towards race, and again find a main effect of political ideology, such that more conservative participants allocated a greater number of points towards race in Cluster 4 than did liberal participants ($b = .17$, $p = .03$, overall model $R^2 = .09$). The sex difference remained significant in this model ($b = .14$, $p = .01$), but the Political Conservatism X Sex interaction was nonsignificant ($p = .16$).

I then conducted parallel analyses with respect to ecology information, examining the potential effects of sex and political conservatism in amount of points allocated towards ecology information in Cluster 4. As seen in Cluster 3, sex differences did not emerge in the number of points allocated towards ecology in Cluster 4 ($p = .30$). Also as seen in Cluster 3, there was a significant effect of political ideology, such that more liberal participants allocated a greater number of points towards ecology information than did conservative participants ($b = -.16, p = .05$, overall model $R^2 = .02$). This effect was not qualified by a Political Ideology X Sex interaction ($p = .40$).

I next examined the number of points participants allocated towards ecology information in Cluster 4 as compared to other types of available information. As predicted, I find that participants allocated a substantial amount of points to ecology information in Cluster 4 ($M = 35.26, SD = 21.61$), and that the amount of points allocated towards ecology in Cluster 4 was significantly greater than the amount of points allocated towards race in Cluster 4, $t(304) = 14.36, p < .001, d = 1.65$,¹⁴ see Table 2. However, the number of points allocated towards ecology information and information about the person's age at arrest ($M = 34.52, SD = 20.76$) were not significantly different from one another ($p = .73$).

Finally, I examined whether the number of points allocated towards race in Cluster 4 decreased as compared to Cluster 2. Using a paired samples t-test, I find that—contrary to predictions—the number of points allocated towards race in Clusters 2 and 4 were statistically equivalent ($p = .13$); see Table 2. I examined these effects separately

¹⁴ Note that despite sex differences in the number of points allocated towards race in Cluster 4, these effects were consistent for both male and female participants.

for participants categorized as “liberal” as compared to participants categorized as “conservative”, and find no differences in number of points allocated towards race in Clusters 2 and 4 for either conservative or liberal participants (both $ps > .46$).

Table 2. Mean and standard deviation of points allocated towards varying types of accessible recidivism predictor information, presented as a function of cluster (Study 3).

	Cluster 2		Cluster 3		Cluster 4	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev
Age at arrest	43.78	24.51	33.90	20.25	34.52	20.76
Ethnicity/race	12.25	15.74	N/A	N/A	11.21	14.28
Ecology	N/A	N/A	32.32	20.41	32.26	21.61
Whether a parent	22.72	17.57	16.71	14.43	19.01	16.36
Personality score	21.26	19.08	17.06	17.10	N/A	N/A

Ecology information is prioritized in a ranking task

I predicted that when presented with alternative recidivism predictors simultaneously, participants would rank ecology information highly as a result of its diagnosticity for predicting the life history strategy of the target. In particular, I predicted that ecology information would be ranked significantly more highly than race information.

The full presentation of recidivism predictors and average ranking values are presented in Table 3. As predicted, ecology information is strongly prioritized: out of 12 alternative predictors of recidivism, ecology information is ranked significantly higher than eight other types of information. And, as predicted, ecology information is strongly

prioritized as compared to race information in particular, $t(298) = -13.39, p < .001, d = 1.55$. The only types of information prioritized more highly than ecology are the age at which the person was arrested, whether the person is a member of a gang, whether the person has a mental illness, and the person's number of previous convictions (all $ps < .002$).¹⁵

Finally, I examined whether political ideology shaped participants' ranking of race and ecology information. I find that political ideology significantly predicted participants' ranking of both race ($b = -.23, p < .001$, overall model $R^2 = .06$) and ecology ($b = .11, p = .05$, overall model $R^2 = .01$) information, such that conservative participants tended to rank race information more highly than liberal participants, and liberal participants tended to rank ecology information more highly than conservative participants.

¹⁵ Despite its lack of explanatory power for determining the number of points allocated to ecology information, for exploratory purposes I examined whether the ranking of ecology information would vary as a function of the type of crime considered. An omnibus ANOVA indicated a marginally significant effect of crime condition, $F(5, 293) = 2.20, p = .06$, partial $\eta^2 = .04$. I probed this effect by conducting a series of contrasts, and find that participants ranked ecology information as more important when evaluating inmates convicted of cybercrime and domestic violence as compared to the other four crimes (drug possession with intent to sell, vehicle theft, forgery, and animal abuse) (both $ps < .001$). The ranked importance of ecology when evaluating cybercrime and domestic violence was statistically equivalent ($p = .98$).

Table 3. Means and standard deviations of recidivism predictors presented in Study 3, sorted as a function of average ranking. Lower numbers indicate higher degree of perceived importance.

Recidivism Predictor	Average Ranking	Standard Deviation
Number of previous convictions	2.56	2.51
Member of a gang	3.91	3.07
Age at arrest	4.97	2.8
Mental illness	5.03	3.13
Ecology information	5.84	3.26
Current age	7.1	2.89
Whether a parent	7.93	3.19
IQ	8.04	2.91
Completed high school	8.13	2.92
Personality score	8.78	3.33
Sex	9.18	3.02
Ethnicity/race	9.67	3.38
Whether married	9.83	2.53

Study 3 Discussion

In Study 3, I examined whether individuals prioritized more causal life history strategy-relevant information (such as home ecology) over less direct life history strategy-relevant information (such as race) when predicting the likelihood of re-offense.

Despite its relatively low diagnosticity for predicting life history strategy (when

compared to ecology), my framework posits that perceivers do use race as a proxy for ecology in the absence of alternative cues to life history strategy. However, contrary to predictions, participants did not allocate a significant proportion of their points towards race information in Cluster 2. This did not vary as a function of the race stereotypicality of the crime. One potential explanation is that, due to social desirability concerns, participants were reluctant to so blatantly indicate their use of race in evaluations of parole. Analyses revealed no effect of Motivation to Respond Without Prejudice in number of points allocated towards race information. However, politically conservative participants allocated a greater number of points towards race information than did politically liberal participants; this effect was stronger for males than females.

A second, more likely, explanation for my findings is that one of the “distractor” items—age at which the person was arrested—was an unintentionally strong cue to life history strategy. This item was originally selected because of its vagueness, as it does not simultaneously provide information about the inmate’s *current* age, or the age at *first* arrest. It is possible that participants were primarily using this item to seek information about whether the inmate had committed a crime at a young age, compared to as a middle-aged or older adult. Indeed, committing a crime “at a young age” was included as one of the life history strategy-relevant predictors of recidivism in Study 2. Thus, the “distractor” item may have instead provided participants with a more proximate cue to ecology than race, and was justly prioritized.

In Cluster 3 I find that, as predicted, in the absence of race information participants allocated a substantial proportion of their points towards ecology information. Additionally, the amount of points invested into ecology information in the

absence of race was significantly greater than the amount of points invested into race information in the absence of ecology. However, as in Cluster 2, participants again devoted a substantial number of points towards information about the person's age at arrest, suggesting that participants may have inferred life history strategy information from this item to a greater extent than expected.

In Cluster 4, when both race and ecology information was presented simultaneously, the predicted effects emerged: participants allocated significantly more points towards ecology than towards race. However, participants again allocated a similarly high number of points towards information about the person's age of arrest as were allocated towards ecology information, perhaps because—as posited above—both items were seen as useful predictors of life history strategy. Additionally, the number of points allocated towards race did not decrease between Cluster 2 and 4, perhaps as a function of a floor effect occurring in Cluster 2.

Finally, in the ranking task, I find that when ecology information was simultaneously presented with several alternative types of information, ecology information was prioritized highly—both in general and as compared to race, specifically—as useful information for predicting the likelihood that an inmate will reoffend. Both liberal and conservative participants ranked ecology information more highly than race information, but conservative participants tended to rank race information more highly than did liberal participants.

The types of information that participants prioritized over ecology information in the ranking task were the inmate's number of previous convictions, whether they are a member of a gang, age at arrest, and whether they have a mental illness. An individual's

previous number of convictions is well-established in the criminal justice literature as one of the strongest predictors of re-offense (e.g., Gendreau et al., 1996), and offers direct information about an individual's likely life history strategy (e.g., their likelihood to engage in socially opportunistic behavior and their impulsivity). Gang membership similarly offers direct information about an individuals' life history strategy (thus its inclusion as a life history strategy-relevant predictor in Study 2). Finally, perceivers associated mental illness more so with individuals from desperate ecologies as compared to hopeful ecologies in Study 2, suggesting that the item does confer potentially relevant life history strategy information. Additionally, as a result of their disorder, perceivers may see individuals with mental illness as less likely to be successfully rehabilitated (e.g., Steadman, 1981).

Ultimately, both the budget allocation and ranking task demonstrated perceivers' use of ecology (and other life history strategy-relevant information) for predicting the likelihood of re-offense. And, importantly, the use of these more direct measures of life history strategy was strongly prioritized over the use of race information.

GENERAL DISCUSSION

Summary of findings

This project presented a series of three studies exploring how cues to life history strategy influence perceptions of criminality. I proposed, first, that because ecology provides more causal information about life history strategy than race, stereotypes of criminal behavior are likely to be driven by beliefs about the presumed ecology of the target, rather than the target's race. The evidence for this proposition is mostly supportive. Across a range of stereotypically "Black" crimes, I find that—in the presence of ecology information—Whites and Blacks from desperate (and hopeful) ecologies were stereotyped as similarly likely (or unlikely) to commit these specific crimes. This suggests that the stereotypic association between Black individuals and criminal behavior described in previous literature (e.g., Osborne & Davies, 2013) may instead reflect an association between individuals from desperate ecologies and their likelihood to possess relatively fast life history strategies (including an increased propensity for criminality).

However, findings within the stereotypically "White" crimes are less supportive of the first study's proposition. For example, I find that only one of the four stereotypically "White" crimes was significantly associated with hopeful ecologies (cybercrime). Additionally, across these "White" crimes, race differences within the hopeful ecology persisted; Black targets in hopeful ecologies were seen as especially unlikely to commit stereotypically "White" crimes. With respect to cybercrime and forgery, this effect was partly explained by participants' political ideology: liberal participants stereotyped Black targets in hopeful ecologies as less likely to commit these crimes than their White counterparts, whereas conservative participants did not. This

pattern was also observed with respect to serial killings and possession of child pornography, as well as the “Race-Neutral” crimes of statutory rape and driving under the influence of alcohol, but was statistically nonsignificant. Despite these minor differences, in sum, stereotypes of Black and White individuals’ propensity to commit a range of crimes were largely driven by beliefs about the presumed ecology of the targets, and not the targets’ race.

In the second study, I proposed that lay beliefs about predictors of recidivism would reflect inferences of life history strategy, and thus these beliefs would also track ecology rather than race. The evidence for this proposition is also mostly supportive. In the absence of ecology information, Black targets were stereotyped as more likely than White targets to exhibit characteristics that are used as predictors of recidivism in the study and practice of criminal justice. However, in the presence of ecology information, these race differences disappeared: Black and White targets from desperate ecologies were viewed as similarly likely to exhibit the recidivism predictors, and Black and White targets from hopeful ecologies were stereotyped as similarly unlikely to exhibit the recidivism predictors.

Additionally, I demonstrated that social perceivers applied these ecology-driven stereotypes to the life history strategy-relevant predictors, but not to a life history strategy-irrelevant predictor (the likelihood that the target is a parent). Contrary to predictions, though, I find that social perceivers applied ecology-driven stereotypes when assessing whether an individual is intelligent, and whether an individual has a mental disorder and an antisocial personality. Although the immediate relevance of these attributes for life history strategy is less clear than those categorized as “life history

strategy-relevant,” research suggests that each of these recidivism predictors may in fact be linked to life history strategy, and should not have been categorized as “life history strategy-irrelevant.” I also find that social perceivers associated owning a pet and being an extrovert with targets from hopeful, rather than desperate, ecologies—despite previous research successfully employing these items as filler traits (e.g., Williams et al., 2016). In sum, stereotypes of Black and White individuals’ likelihood to exhibit life history strategy-relevant recidivism predictors were largely driven by beliefs about the presumed ecology of the targets, and not the targets’ race.

Finally, in the third study, I proposed that individuals would prioritize ecology information over race information when making decisions about whether a specific target is likely to reoffend. The evidence for this proposition is somewhat supportive. I find that—in both the absence and presence of race information—social perceivers highly prioritized the importance of ecology information for predicting whether or not an inmate is likely to reoffend if released on parole. However, in the absence of ecology information, participants did not prioritize the importance of race information for predicting whether or not an inmate was likely to reoffend if released. This was partly shaped by participants’ political ideology: conservative participants allocated more points towards race information than did liberal participants. Additionally, an unexpectedly high level of importance was accorded to an intended “filler” item (the age at which the person was arrested).

In sum, my findings provide initial evidence suggesting that stereotypic associations between Black individuals and perceptions of criminality are largely driven by inferences of life history strategy, and thus these perceptions track ecology rather than

race. Individuals from desperate ecologies were stereotyped as more likely to commit a wide range of crimes than individuals in hopeful ecologies, regardless of race.

Stereotypes of life history strategy-relevant traits linked to recidivism similarly tracked ecology, rather than race. Additionally, social perceivers prioritized ecology information over race information for evaluating whether or not an inmate is likely to reoffend if released on parole.

On balance, the main propositions of the current project were substantiated by the experimental results. However, certain details of the findings prompt interesting questions to be addressed in future research.

Why are Black individuals from hopeful ecologies stereotyped as especially slow life history strategists?

Within Study 1, participants stereotyped Black individuals from hopeful ecologies as possessing slower life history strategies than White individuals from hopeful ecologies. Additionally, when compared to their White counterparts, Black individuals from hopeful ecologies were stereotyped as being especially unlikely to commit cybercrime, forgery, serial killings, possession of child pornography, statutory rape, and driving under the influence of alcohol. However, these race differences were not observed in the desperate ecology conditions.

Three potential explanations might account for these findings. As discussed in the Study 1 results, one possibility is that participants consciously avoided applying “negative” stereotypes to Black individuals from hopeful ecologies, so as to not appear racist. Given that the sample was overwhelmingly composed of liberal White participants, this explanation seems plausible on its face. However, it remains

unconvincing for two reasons. First, it is unclear why participants would be motivated to avoid appearing racist only with respect to Black individuals from hopeful ecologies, but not Black individuals from desperate ecologies. Second, neither extrinsic nor intrinsic motivations to appear unprejudiced were significant predictors of participants' life history strategy stereotypes.

A related possibility is that these findings reflect something akin to the attributional ambiguity phenomenon, in which individuals are more willing to express prejudiced attitudes if the motive for these attitudes can be attributed to something other than prejudice (see, e.g., Snyder, Kleck, Strenta, & Mentzer, 1979). Thus, in the Black desperate condition, participants may have felt more comfortable applying “negative” stereotypes to Black individuals because the “bad” ecology information offered an egalitarian explanation for doing so (i.e., ecology information in the desperate condition provided a race-neutral justification for reporting fast life history stereotypes about Blacks). However, in the Black hopeful condition, participants may have felt that reporting any “negative” responses would have been directly attributed to perceiver racism. The data do not fully support this explanation, however, given that participants in the race-only conditions stereotyped Black individuals as possessing faster life history strategies than White individuals. If participants' stereotypes were primarily shaped by concerns about attributional ambiguity, one would expect participants to be least willing to report “negative” stereotypes about Black individuals in the race-only condition, where no alternative information about the target is provided. This was not the case.

A third possibility is that participants stereotyped Black individuals from hopeful ecologies as slower than White individuals from hopeful ecologies because of actual

perceived differences in the likely life history strategies of these groups. As discussed in the Study 1 results, participants may have viewed Black individuals from hopeful ecologies as necessarily possessing high levels of planfulness and self-investment as a precondition to living within hopeful ecologies, given the systemic obstacles Black individuals face to inhabit these environments (e.g., Eligon & Gebeloff, 2016). In contrast, participants may have perceived hopeful ecologies as a ‘default’ for White individuals, requiring little adjustment in life history strategy. This possibility also accounts for the effect of political ideology in shaping differences between stereotypes of Black and White individuals in hopeful ecologies: liberals are more likely to be attuned to the institutional challenges faced by Black Americans (see, e.g., Zucker & Weiner, 1993). A study directly measuring individuals’ beliefs about the ease with which Blacks and Whites move between desperate and hopeful ecologies—and the extent to which this drives inferences of life history strategy—is a potentially fruitful follow-up.

What is the association between hopeful ecologies and crime?

Given that race and ecology are confounded in the United States, I initially proposed that stereotypically “White” crimes would likely be associated with individuals from hopeful, as compared to desperate, environments. However, despite a greater association with White (as compared to Black) individuals, only one of the four “White” crimes in Study 1 (cybercrime) was associated with individuals from hopeful (as compared to desperate) ecologies. As discussed in the Study 1 results, this finding is somewhat unsurprising. Engaging in criminal behavior, broadly defined, is strongly

associated with fast—rather than slow—life history strategies.¹⁶ Hopeful ecologies, generally speaking, are strongly associated with slow—rather than fast—life history strategies. In addition, the confound between race and ecology in the United States is by no means a perfect correlation; many White Americans live in desperate ecologies, and many Black Americans live in hopeful ecologies. Thus, it is feasible that participants considering stereotypically “White” crimes were accessing a specific subtype of individuals: Whites who live in desperate environments.¹⁷ Follow-up research could probe this explanation by asking participants to provide more detailed information about the circumstances under which they believe targets are likely to commit particular crimes, and the imagined characteristics of these targets.

Sample and stimuli

Race/ethnicity composition of sample. All three studies in this project drew participant samples from Amazon’s Mechanical Turk. An advantage of using this sample is that it tends to be more representative of the general United States population than undergraduate student samples (e.g., Berinsky, Huber, & Lenz, 2012). However, the majority of participants sampled in this project were White, in their mid-30s, and

¹⁶ As described previously, fast life history strategies are characterized in part by greater inclination toward impulsivity, risk-taking, and social opportunism. Participating in illegal activities is, by definition, “risky” (and often socially opportunistic) behavior, and thus more congruent with a fast life history strategy.

¹⁷ The relationship between ecology and life history strategy is also not a perfect correlation; variability in life history strategy exists even within a particular ecology (see, e.g., Del Giudice et al., 2015). Indeed, a willingness to engage in criminal behavior may be a particularly lucrative strategy for some individuals within hopeful ecologies. For example, the securities fraud perpetrated by financier Bernard Madoff successfully targeted a number of wealthy celebrities and executives, many of whom made investments after interacting with Madoff at exclusive country clubs (e.g., Peltz & Caruso, 2009).

politically liberal. Accessing more racially diverse samples in follow-up research would permit me to examine whether non-White social perceivers share similar stereotypic race-crime associations as White perceivers. Additionally, accessing a more politically diverse sample would allow me to more rigorously investigate how liberal and conservative individuals differ in their stereotypes of Black and White targets from desperate and hopeful ecologies.

Budget methodology for assessing importance of recidivism predictors. In Study 3, participants allocated fictitious ‘points’ to indicate the perceived importance of a number of traits for predicting whether or not an inmate is likely to reoffend. This methodology has been successfully employed in previous research examining mate preferences (e.g., Li, Bailey, Kenrick, & Linsenmeier, 2002). Its primary advantage is that participants are forced to prioritize the importance of particular traits or types of information over others; each point allocation to a particular type of information necessarily reduces the points that can be allocated to alternative types of information. Thus, it is highly effective at distinguishing between what participants view as ‘luxuries’ and what are seen as ‘necessities’ (Li et al., 2002).

In the current project, however, this methodology was problematic in two ways. First, it failed to provide participants with an incentive for accuracy, which may have left participants with little motivation to select predictors that, though potentially informative, are socially undesirable (e.g., race). Second, its measure of the importance of race for predicting recidivism was blatant; participants used a slider to allocate points to a trait labeled “ethnicity/race.” For a person concerned with appearing prejudiced, doing so would likely result in some discomfort. It is perhaps unsurprising, then, that over 40

percent of participants were unwilling to allocate a single point to this category of information.

Future research could adopt alternative methodologies that would address these two issues. One possibility would be to present participants with a list of the 13 potential recidivism predictors, and state that the criminal justice literature has assessed the predictive value of these 13 traits for evaluating likelihood of re-offense. Participants would then be asked to provide their estimate of each trait's "prediction value." This would address the accuracy concern by suggesting to participants that there is a "correct" answer known to the researcher. This would also allay concerns of social desirability in responding, as participants are asked to report their estimate of a presumed reality, rather than reporting their personal beliefs about whether a trait is "important" for predicting re-offense. A second possibility would be to instead present participants with a vignette describing an inmate who committed a particular crime and was released on parole. The content of the vignette would be experimentally manipulated to include race information (but no ecology information), ecology information (but no race information), or both race and ecology information. Participants would then be presented with a series of questions asking them to surmise whether or not the inmate reoffended. Utilizing this methodology in a between-subjects design would make the race information less obvious, and participants would again be under the impression that a correct response is possible (and known to the researcher).

Implications for reducing discrimination in the criminal justice system

From a life history theory perspective, a person's race has little bearing on whether he or she is inclined to commit specific crimes (or crime in general). Instead, it is

a person's ecology that shapes propensity for criminal behavior, by altering the functionality of adopting a life history strategy that promotes greater impulsivity, risk-taking, and socially opportunistic behaviors. Race, therefore, is only a useful cue for predicting criminality insofar as it provides heuristic information about ecology—and ecology is only a useful cue for predicting criminality insofar as it provides causal information about life history strategy.

My findings demonstrate that social perception may actually be attuned to this supposition, leading inferences of criminality to track the causal cue to life history strategy (ecology) rather than the heuristic cue (race). This suggests a potentially novel approach for reducing discriminatory outcomes in the legal system: race differences in legal outcomes should be mitigated to the extent that targets present similar cues to ecology. Future work might fruitfully explore whether the presentation of cues suggesting a slow life history strategy can help reduce biased perceptions of individual Black offenders.

Implications for the use of existing recidivism predictors

In this project, I proposed that many extant recidivism predictors in the criminal justice literature reflect life history strategy-relevant traits. For example, one's level of education—a common trait included in risk assessment tools (see, e.g., the PCRA, Johnson, Lowenkamp, VanBenschoten, & Robinson, 2011)—is a focal measure of life history strategy (see, e.g., Sng, Neuberg, Varnum, & Kenrick, 2017; Williams et al., 2016). In light of this proposal, I demonstrated in Study 2 that perceivers' stereotypes of these life history strategy-relevant traits track information about the target's ecology, rather than the target's race.

These findings have potentially important implications for addressing ongoing controversy in the use of risk assessment tools—specifically, the critique that many risk factors actually function as “proxies” for race, resulting in greater punitive outcomes for racial minorities (see, e.g., Harcourt, 2015; Starr, 2014). My perspective suggests that in terms of shaping life history strategy, *race* is the proxy variable—due only to its imperfect correlation with ecology in the United States. Thus, for the purposes of inferring life history strategy, the predictive utility of race information is negligible in the presence of ecology information. It is a separate question (and one outside the scope of this project) whether—despite being diagnostic—ecology information *should* be used to predict risk of re-offense, given that individuals have limited control over the predictability and resource-richness of their environments.

Future Directions

Interpretation and prioritization of ecology cues. Participants in the current project were presented with ecology information in the form of a written description. However, social perceivers rarely have access to such explicit information, and must infer ecology from available, perceivable cues. These cues may vary in their immutability—for example, the clothing someone wears, as compared to the health and appearance of their teeth. From an affordance management perspective, invariant cues likely convey more dependable information, and should thus be prioritized. Which specific cues perceivers use to infer ecology, and the relative strength of these cues, is a ripe area for future research.

Risk assessment, as derived from life history theory. The current project categorized extant recidivism predictors as a function of their life history strategy-

relevance. However, one could also develop a new risk assessment tool comprised of traits derived directly from life history theory. Such an exercise has the potential to reveal a number of attributes wholly unconsidered in existing risk assessment tools, yet nonetheless useful for predicting re-offense. (As one example, the work of Ellis (2004) might suggest using age of menarche as a recidivism predictor for female offenders.)

Affordance management in the criminal justice context. Racial disparities in the criminal justice system are an invidious consequence of a biased perceptual system. However, adopting an affordance management perspective provides a theoretical framework for understanding why these biases exist, rather than simply dismissing them as irrational (i.e., afunctional). Although the current project focused specifically on race, an affordance management approach is also informative for understanding why perceivers are attuned to a number of additional cues known to influence assessments of culpability and punishment (e.g., sex, age, physical attractiveness). Future research might explore the specific and nuanced ways in which social perceivers assess and respond to the threats and opportunities posed by individual offenders.

Conclusion

Adopting an affordance management and life history theory approach, this project investigated the relationship between ecology, race, and perceptions of criminality. Findings suggest that social perceivers prioritize ecology information over race information when assessing a target's likelihood to commit specific crimes, and likelihood of recidivism. Ultimately, the project provides a base for an improved understanding of how inferences of life history strategy shape perceptions of criminal

behavior, and suggests possible tools for developing interventions to reduce racial bias in the justice system.

REFERENCES

- Andrews, D.A., & Bonta, J. (2000). *The level of service inventory-revised*. Toronto, Canada: Multi-Health Systems.
- Baldus, D.C., Woodworth, G., & Pulaski, C.A. (1990). *Equal justice and the death penalty: A legal and empirical analysis*. Upne.
- Beaver, K. M., DeLisi, M., Mears, D. P., & Stewart, E. (2009). Low self-control and contact with the criminal justice system in a nationally representative sample of males. *Justice Quarterly*, 26, 695-715.
- Benda, B. B., Corwyn, R. F., & Toombs, N. J. (2001). From adolescent “serious offender” to adult felon: A predictive study of offense progression. *Journal of Offender Rehabilitation*, 32, 79-108.
- Berinsky, A. J., Huber, G. A., & Lenz, G. S. (2012). Evaluating online labor markets for experimental research: Amazon.com’s Mechanical Turk. *Political Analysis*, 20, 351-368.
- Brewer, M. B. (1997). On the social origins of human nature. In C. McGarty & S. A. Haslam (Eds.), *The message of social psychology: Perspectives on mind in society* (pp. 54–62). Cambridge, MA: Blackwell.
- Bridges, G.S., & Steen, S. (1998). Racial disparities in official assessments of juvenile offenders: Attributional stereotypes as mediating mechanisms. *American Sociological Review*, 63, 544-570.
- Brown, M. J., Henriquez, E., & Groscup, J. (2008). The effects of eyeglasses and race on juror decisions involving a violent crime. *American Journal of Forensic Psychology*, 26, 25-43.
- Campbell, D. T. (1982). Legal and primary-group social controls. *Journal of Social and Biological Structures*, 5, 431–438.
- Cottle, C. C., Lee, R. J., & Heilbrun, K. (2001). The prediction of criminal recidivism in juveniles a meta-analysis. *Criminal Justice and Behavior*, 28, 367-394.
- Del Giudice, M. (2016). The life history model of psychopathology explains the structure of psychiatric disorders and the emergence of the p factor: A simulation study. *Clinical Psychological Science*, 4, 299-311.
- Del Giudice, M., Gangestad, S. W., & Kaplan, H. S. (2015). Life history theory and evolutionary psychology. In D. M. Buss (Ed.), *The handbook of evolutionary psychology* (2nd ed.). New York, NY: Wiley and Sons.

- Devine, P.G., & Elliot, A.J. (1995). Are racial stereotypes *really* fading? *Personality and Social Psychology Bulletin*, 21, 1139–1150.
- Dunkel, C.S., Mathes, E., & Beaver, K.M. (2013). Life history theory and the general theory of crime: Life expectancy effects on low self-control and criminal intent. *Journal of Social, Evolutionary, and Cultural Psychology*, 7, 12-23.
- Dunkel, C.S., Mathes, E., & Decker, M. (2010). Behavioral flexibility in life history strategies: The role of life expectancy. *Journal of Social, Evolutionary and Cultural Psychology*, 4, 51-61.
- Dunkel, C.S., Mathes, E., & Papini, D.R. (2010). The effect of life expectancy on aggression and generativity: A life history perspective. *Evolutionary Psychology*, 8, 492-505.
- Edkins, V.A. (2011). Defense attorney plea recommendations and client race: Does zealous representation apply equally to all? *Law and Human Behavior*, 35, 413-425.
- Eligon, J., & Gebeloff, R. (2016, August 20). Affluent and Black, and still trapped by segregation. *The New York Times*. Retrieved from <https://www.nytimes.com/2016/08/21/us/milwaukee-segregation-wealthy-black-families.html>.
- Ellis, B. J. (2004). Timing of pubertal maturation in girls: An integrated life history approach. *Psychological Bulletin*, 130, 920-958.
- Ellis, B. J., Figueredo, A. J., Brumbach, B. H., & Schlomer, G. L. (2009). Fundamental dimensions of environmental risk. *Human Nature*, 20, 204–268.
- Ellis, L., Beaver, K.M., & Wright, J. (2009). *Handbook of crime correlates*. Academic Press: Oxford, UK.
- Figueredo, A. J., Vásquez, G., Brumbach, B. H., Schneider, S. M., Sefcek, J. A., Tal, I. R., et al. (2006). Consilience and life history theory: From genes to brain to reproductive strategy. *Developmental Review*, 26, 243–275.
- Fischman, J.B., & Schanzenbach, M.M. (2012). Racial disparities under the federal sentencing guidelines: The role of judicial discretion and mandatory minimums. *Journal of Empirical Legal Studies*, 9, 729-764.
- Floyd v. City of New York, 959 F. Supp. 2d 540 (2013).
- Ford, M.C. (1986). The role of extralegal factors in jury verdicts. *The Justice System Journal*, 16-39.

- Gelman, A., Fagan, J., & Kiss, A. (2012). An analysis of the New York City police department's "stop-and-frisk" policy in the context of claims of racial bias. *Journal of the American Statistical Association*.
- Gelsthorpe, L., & Padfield, N. (Eds.). (2012). *Exercising discretion*. Routledge.
- Gendreau, P., Little, T., & Goggin, C. (1996). A meta-analysis of the predictors of adult offender recidivism: What works!. *Criminology*, 34, 575-608.
- Goldstein, J. (1960). Police discretion not to invoke the criminal process: Low-visibility decisions in the administration of justice. *The Yale Law Journal*, 69, 543-594.
- Griskevicius, V., Tybur, J.M., Delton, A.W., & Robertson, T.E. (2011). The influence of mortality and socioeconomic status on risk and delayed rewards: a life history theory approach. *Journal of Personality and Social Psychology*, 100, 1015-1026.
- Hanson, R.K., & Morton-Bourgon, K.E. (2009). The accuracy of recidivism risk assessments for sexual offenders: A meta-analysis of 118 prediction studies. *Psychological Assessment*, 21, 1-21.
- Harcourt, B. (2015). Risk as a proxy for race: The dangers of risk assessment. *Federal Sentencing Reporter*, 27, 237-243.
- Haselton, M.G., & Buss, D.M. (2000). Error management theory: A new perspective on biases in cross-sex mind reading. *Journal of Personality and Social Psychology*, 78, 81-91.
- Haselton, M.G., & Nettle, D. (2006). The paranoid optimist: An integrative evolutionary model of cognitive biases. *Personality and Social Psychology Review*, 10, 47-66.
- Hill, K., & Kaplan, H. (1999). Life history traits in humans: Theory and empirical studies. *Annual Review of Anthropology*, 28, 397-430.
- Hollander-Blumoff, R.E. (2007). Social psychology, information processing, and plea bargaining. *Marquette Law Review*, 91, 163.
- Huebner, B.M., & Bynum, T.S. (2008). The role of race and ethnicity in parole decisions. *Criminology*, 46, 907-938.
- Johnson, J., Lowenkamp, C., VanBenschoten, S., & Robinson, C. (2011). The construction and validation of the federal Post Conviction Risk Assessment (PCRA). *Federal Probation*, 75, 16-29.
- Jost, J. T., Glaser, J., Kruglanski, A. W., & Sulloway, F. J. (2003). Political conservatism as motivated social cognition. *Psychology Bulletin*, 129, 339-375.

- Katz, D., & Braly, K. (1993). Racial stereotypes in one hundred college students. *Journal of Abnormal and Social Psychology, 28*, 280–290.
- Kenrick, D. T., Neuberg, S. L., Griskevicius, V., Becker, D. V., & Schaller, M. (2010). Goal-driven cognition and functional behavior: The fundamental motives framework. *Current Directions in Psychological Science, 19*, 63–67.
- Kochel, T.R., Wilson, D.B., & Mastrofski, S.D. (2011). Effect of suspect race on officers' arrest decisions. *Criminology, 49*, 473-512.
- Kubrin, C.E., Squires, G., & Stewart, E.A. (2007). Neighborhoods, race, and recidivism: The Community reoffending nexus and its implications for African Americans. *SAGE Race Relations Abstracts, 32*, 7-37.
- Li, N. P., Balley, J. M., Kenrick, D. T., & Linsenmeier, J. A. (2002). The necessities and luxuries of mate preferences: Testing the tradeoffs. *Journal of Personality and Social Psychology, 82*, 947-955.
- Lynch, M., & Haney, C. (2009). Capital jury deliberation: Effects of death sentencing, comprehension, and discrimination. *Law and Human Behavior, 33*, 481.
- Madon, S., Gyll, M., Aboufadel, K., Montiel, E., Smith, A., Palumbo, P., & Jussim, L. (2001). Ethnic and national stereotypes: The Princeton trilogy revisited and revised. *Personality and Social Psychology Bulletin, 27*, 996–1010.
- Massey, D. S. (2004). Segregation and stratification: A biosocial perspective. *DuBois Review: Social Science Research on Race, 1*, 1–19.
- McArthur, L. Z., & Baron, R. M. (1983). Toward an ecological theory of social perception. *Psychological Review, 90*, 215–238.
- Misner, R.L. (1996). Recasting prosecutorial discretion. *The Journal of Criminal Law and Criminology, 86*, 717-777.
- Mitchell, O. (2005). A meta-analysis of race and sentencing research: Explaining the inconsistencies. *Journal of Quantitative Criminology, 21*, 439-466.
- Mitchell, T.L., Haw, R.M., Pfeifer, J.E., & Meissner, C.A. (2005). Racial bias in mock juror decision-making: A meta-analytic review of defendant treatment. *Law and Human Behavior, 29*, 621-37.
- Myers, M.A., & Hagan, J. (1979). Private and public trouble: Prosecutors and the allocation of court resources. *Social Problems, 26*, 439-451.
- Nafekh, M., & Motiuk, L. (2002). *The Statistical Information on Recidivism – Revised 1*

- Scale: A Psychometric Examination*. Research Branch Correctional Service of Canada.
- Nally, J.M., Lockwood, S., Ho, T., & Knutson, K. (2014). Post-release recidivism and employment among different types of released offenders: A 5-year follow-up study in the United States. *International Journal of Criminal Justice Sciences*, 9, 16-34.
- Nesse, R.M. (2005). Natural selection and the regulation of defenses: A signal detection analysis of the smoke detector principle. *Evolution and Human Behavior*, 26, 88–105.
- Neuberg, S. L., & Cottrell, C. A. (2006). Evolutionary bases of prejudices. In M. Schaller, J. A. Simpson, & D. T. Kenrick (Eds.), *Evolution and social psychology* (pp. 163–187). New York: Psychology Press.
- Neuberg, S. L., Kenrick, D. T., & Schaller, M. (2010). Evolutionary social psychology. In S. T. Fiske, D. Gilbert, & G. Lindzey (Eds.), *Handbook of social psychology* (pp. 761–796). New York: John Wiley & Sons.
- Neuberg, S.L., & Sng, O. (2013). A life history theory of social perception: Stereotyping at the intersections of age, sex, ecology (and race). *Social Cognition*, 31, 696.
- Osborne, D., & Davies, P. G. (2013). Eyewitness identifications are affected by stereotypes about a suspect's level of perceived stereotypicality. *Group Processes & Intergroup Relations*, 16, 488-504.
- Osler, M. (2012). The promise of trailing-edge sentencing guidelines to resolve the conflict between uniformity and judicial discretion. *NCJL & Tech.*, 14, 203.
- Paternoster, R. (1984). Prosecutorial discretion in requesting the death penalty: A case of victim-based racial discrimination. *Law and Society Review*, 437-478.
- Peltz, J., & Caruso, D. B. (2009, March 13). Tough task ahead to find Madoff money, co-schemers. *The Associated Press*. Retrieved from http://www.mlive.com/business/index.ssf/2009/03/tough_task_ahead_to_find_madoff.html.
- Piquero, A.R., Jennings, W.G., Diamond, B., & Reingle, J.M. (2015). A systematic review of age, sex, ethnicity, and race as predictors of violent recidivism. *International Journal of Offender Therapy and Comparative Criminology*.
- Plant, E. A., & Devine, P. G. (1998). Internal and external motivation to respond without prejudice. *Journal of Personality and Social Psychology*, 75, 811-832.

- Proctor, J.L. (1999). The “New Parole”: An analysis of parole board decision making as a function of eligibility. *Journal of Crime and Justice*, 22, 193-217.
- Reinganum, J.F. (1988). Plea bargaining and prosecutorial discretion. *The American Economic Review*, 713-728.
- Richerson, P., & Boyd, R. (1995, January). *The evolution of human hypersociality*. Paper presented at the Ringberg Castle Symposium on Ideology, Warfare and Indoctrinability. Ringberg, Germany.
- Robinson, P. H., & Kurzban, R. (2006). Concordance and conflict in intuitions of justice. *Minnesota La Review*, 91, 1829-1907.
- Sampson, R.J., Raudenbush, S.W., & Earls, F. (1997). Neighborhoods and violent crime: A multilevel study of collective efficacy. *Science*, 277, 918-924.
- Shermer, L.O.N., & Johnson, B.D. (2010). Criminal prosecutions: Examining prosecutorial discretion and charge reductions in US federal district courts. *Justice Quarterly*, 27, 394-430.
- Smith, R.J., & Levinson, J.D. (2012). The impact of implicit racial bias on the exercise of prosecutorial discretion. *Seattle University Law Review*, 35, 795-826.
- Sng, O., Williams, K.E.G., & Neuberg, S.L. (in prep). Ecological stereotypes across race and cultures: A life history perspective. Manuscript in preparation.
- Sng, O., Williams, K.E.G., & Neuberg, S.L. (in prep). Can race be replaced? Ecology and race categorization. Manuscript in preparation.
- Sng, O., Neuberg, S. L., Varnum, M. E. W., & Kenrick, D. T. (2017). The crowded life is a slow life: Population density and life history strategy. *Journal of Personality and Social Psychology*. Advance online publication. <http://dx.doi.org/10.1037/pspi0000086>.
- Snyder, M. L., Kleck, R. E., Strenta, A., & Mentzer, S. J. (1979). Avoidance of the handicapped: An attributional ambiguity analysis. *Journal of Personality and Social Psychology*, 37, 2297-2306.
- Sobol, J. (2010). Social ecology and police discretion: The influence of district crime, cynicism, and workload on the vigor of police response. *Journal of Criminal Justice*, 38, 481-488.
- Sommers, S.R., & Marotta, S.A. (2014). Racial disparities in legal outcomes on policing, charging decisions, and criminal trial proceedings. *Policy Insights from the Behavioral and Brain Sciences*, 1, 103-111.

- Spohn, C. (2008). *How do Judges Decide? The Search for Fairness and Justice in Punishment*, Thousand Oaks, CA: Sage.
- Stanko, E.A. (1981). Impact of victim assessment on prosecutors' screening decisions: The case of the New York County District Attorney's Office, *Law and Society review*, 16, 225.
- Starr, S. (2014). Evidence-based sentencing and the scientific rationalization of discrimination. *Stanford Law Review*, 66, 803-872.
- Starr, S. (2015). The new profiling: Why punishing based on poverty and identity is unconstitutional and wrong. *Federal Sentencing Reporter*, 27, 229-236.
- Steadman, H. J. (1981). Critically reassessing the accuracy of public perceptions of the dangerousness of the mentally ill. *Journal of Health and Social Behavior*, 22, 310-316.
- Stearns, S. C. (1976). Life-history tactics: A review of the ideas. *Quarterly Review of Biology*, 51, 3-47.
- Steffensmeier, D., Ulmer, J., & Kramer, J. The interaction of race, gender, and age in criminal sentencing: The punishment cost of being young, black, and male. *Criminology*, 36, 763-798.
- Trivers, R. (1972). Parental investment and sexual selection. *Sexual Selection & the Descent of Man*, Aldine de Gruyter: New York, 136-179.
- Ulmer, J.T., Kurlychek, M.C., & Kramer, J.H. (2007). Prosecutorial discretion and the imposition of mandatory minimum sentences. *Journal of Research in Crime and Delinquency*, 44, 427-458.
- Visher, C.A. (1987). Juror decision making: The importance of evidence. *Law and Human Behavior*, 11, 1.
- Wainwright v. Witt, 469 US 412 (1985).
- Webster, J.M., Dickson, M.F., Staton-Tindall, M., & Leukefeld, C.G. (2015). Predictors of recidivism among rural and urban drug-involved prisoners. *Journal of Offender Rehabilitation*, 54, 539-555.
- Wehrman, M.M. (2010). Race, concentrated disadvantage, and recidivism: A test of interaction effects. *Journal of Criminal Justice*, 38, 538-544.
- Williams, M.R., & Burek, M.W. (2008). Justice, juries, and convictions: The relevance of race in jury verdicts. *Journal of Crime and Justice*, 31, 149-169.

- Williams, K.E.G., Sng, O., & Neuberg, S.L. (2016). Ecology-driven stereotypes override race stereotypes. *Proceedings of the National Academy of Sciences*, *113*, 310-315.
- Zebrowitz, L. A., & Montepare, J. (2006). The ecological approach to person perception: Evolutionary roots and contemporary offshoots. In M. Schaller, J. A. Simpson, & D. T. Kenrick (Eds.), *Evolution and social psychology* (pp. 81–113). New York: Psychology Press.
- Zucker, G. S., & Weiner, B. (1993). Conservatism and perceptions of poverty: An attributional analysis. *Journal of Applied Social Psychology*, *23*, 925-943.

APPENDIX A

LIST OF CRIMES PRESENTED TO PARTICIPANTS IN PILOT STUDY

Drive-by shooting
Possession of drugs with intent to sell
Robbery (taking any property from another with either the use of force or the threat of force)
Theft (taking the property of another, without the use of force or threat of force)
Burglary (unlawful entry into a residence with the intent to commit a theft or felony therein)
Murder (intentionally causing the death of another person)
Illegal possession of a handgun
Vehicle theft
Resisting arrest
Participation in a gang
Fraud
Bribery
Forgery (e.g., faking a document or signature)
Embezzlement (e.g., theft or misappropriation of funds belonging to one's employer)
Possession of child pornography
School shooting
Child molestation
Serial killings
Identity theft
Cybercrime (e.g., hacking into a financial institution's website)
Vandalism (deliberately destroying or damaging public or private property)
Statutory rape (sexual intercourse with a minor)
Human trafficking (illegally transporting people from one country or area to another, typically for the purposes of forced labor or sexual exploitation)
Arson
Stalking
Driving under the influence of alcohol (DUI)
Prostitution
Domestic violence
Child endangerment
Animal abuse
Failure to appear in court
Failure to pay child support
Underage consumption of alcohol

APPENDIX B

ECOLOGY X RACE MANIPULATIONS (STUDIES 1 & 2)

Imagine a White individual.

Imagine a Black individual.

Imagine an individual who's lived since birth in a poor, economically underdeveloped community where money and jobs are scarce and unpredictable, and opportunities are limited.

Imagine an individual who's lived since birth in a wealthy, economically developed community where money and jobs are plentiful and expected to be available well into the future.

Imagine a White individual who's lived since birth in a poor, economically underdeveloped community where money and jobs are scarce and unpredictable, and opportunities are limited.

Imagine a Black individual who's lived since birth in a poor, economically underdeveloped community where money and jobs are scarce and unpredictable, and opportunities are limited.

Imagine a White individual who's lived since birth in a wealthy, economically developed community where money and jobs are plentiful and expected to be available well into the future.

Imagine a Black individual who's lived since birth in a wealthy, economically developed community where money and jobs are plentiful and expected to be available well into the future.

APPENDIX C

LIFE HISTORY STRATEGY STEREOTYPE ITEMS (STUDY 1)

Sexual Unrestrictedness

Prefer long-term relationships (R)
Wear a wedding ring if married (R)
Have had sex at a young age
Have children at a young age
Have lost their virginity at a young age
Be sexually promiscuous
Have multiple sexual partners
Advertise themselves as sexually available
Change sexual partners often
Have many children

Impulsivity

Act impulsively
Make plans for the future (R)

Social Opportunism

Get angry quickly
Resort quickly to violence
Be physically aggressive
Be trustworthy (R)

Self-Investment

Be educated (R)
Invest in their education (R)

Investment in Children

Have more children than can be financially supported
Invest in the education of their children (R)

APPENDIX D

MOTIVATION TO RESPOND WITHOUT PREJUDICE (STUDIES 1-3) (PLANT & DEVINE, 1998)112

Because of today's PC (politically correct) standards I try to appear nonprejudiced toward people of different races.

I try to hide any negative thoughts about people of different races in order to avoid negative reactions from others.

If I acted prejudiced toward people of different races, I would be concerned that others would be angry with me.

I attempt to appear nonprejudiced toward people of different races in order to avoid disapproval from others.

I try to act nonprejudiced toward people of different races because of pressure from others.

I attempt to act in nonprejudiced ways toward people of different races because it is personally important to me.

According to my personal values, using stereotypes about people of different races is OK.
(R)

I am personally motivated by my beliefs to be nonprejudiced toward people of different races.

Because of my personal values, I believe that using stereotypes about people of different races is wrong.

Being nonprejudiced toward people of different races is important to my self-concept.

APPENDIX E

RECIDIVISM PREDICTORS (STUDY 2)

Life history strategy-relevant predictors

Be married (R)
Have completed high school (R)
Have a college education (R)
Be employed (R)
Exhibit low self-control
Have a history of substance abuse
Have been arrested
Be a member of a gang
Have been raised in a single-parent household
Have received a lot of time and attention from their parents when they were a child (R)
Have experienced a lot of unpredictability as a child
Have committed a crime at a young age
Rely on social assistance (e.g., welfare, Medicaid)
Change home addresses frequently
Live in a high crime neighborhood

Life history strategy-irrelevant predictors

Be a parent
Have a mental illness
Be intelligent
Have an antisocial personality

Filler items

Own a pet
Be an extrovert

APPENDIX F

PARTICIPANT INSTRUCTIONS FOR POINT ALLOCATION TASK (STUDY 3)

Imagine that you are serving as a member of a parole board, tasked with determining whether to release a particular inmate. **Your primary responsibility is concluding whether, if released, this particular inmate is likely to commit the same crime again.**

To help make your decision, you will have access to different kinds of information about the specific individual. The possible types of information are listed below. **Please take a moment to review them carefully.**

[See Appendix G for list of information]

On the following pages, you will be presented with a random combination of these different kinds of information, and asked to allocate points towards the information depending on what you think is most important.

Imagine that you have 100 points to allocate to different kinds of information that you would want to know **to most accurately predict whether or not this individual is likely to commit the offense again if released.**

Please distribute these points to represent the importance of each of the kinds of information: give the most points to the most important information, and give the least points to the least important information. (Note: You may give anywhere from 0-100 points to any single type of information. The total number of points allocated must equal 100.)

How do you choose to allocate your 100 points?

Participant Instructions for Ranking Task (Study 3)

Please rank the importance of each of the following types of information, with 1 being the type of information that is most important for you to know, and 13 being the type of information that is least important for you to know for **accurately determining whether the inmate is likely to reoffend.** (To rank the items, click and drag options into desired order.)

[See Appendix G for list of information]

APPENDIX G

RECIDIVISM INFORMATION (STUDY 3)

The person's score on an introversion/extroversion personality scale
The person's number of previous convictions
The age at which the person was arrested
Whether the person is a parent
The person's current age
The person's sex
The person's ethnicity/race
Whether the person grew up in a poor, unpredictable environment versus a wealthy, predictable environment
Whether the person is a member of a gang
Whether the person has a mental illness
The person's score on an IQ (intelligence) test
Whether the person is married
Whether the person completed high school

APPENDIX H

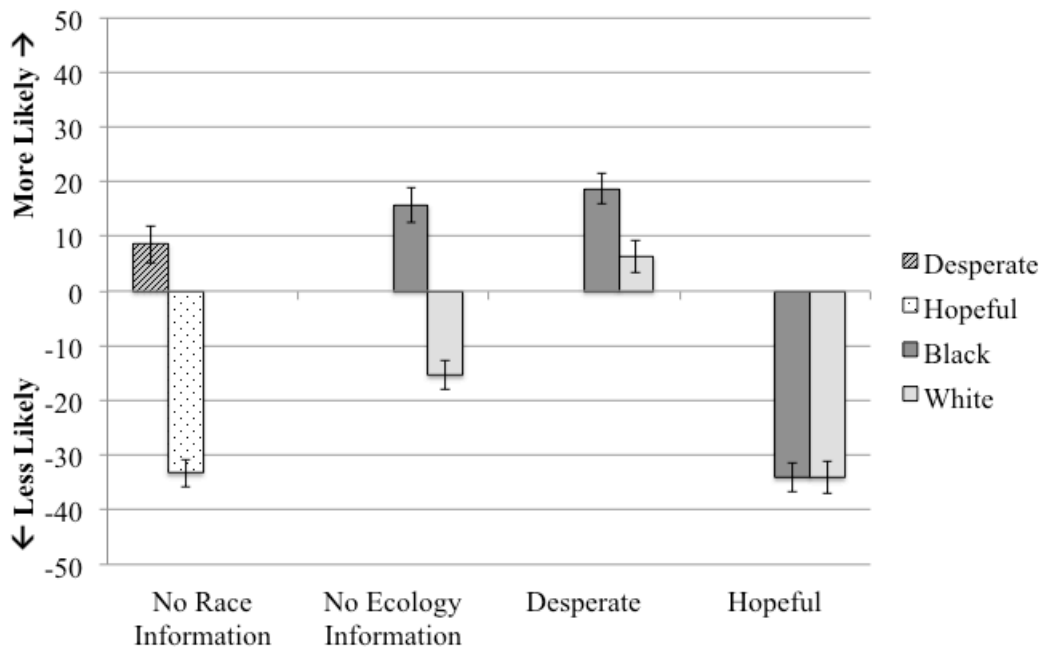
SUPPLEMENTAL ANALYSES & TEXT

Study 1, Stereotypically “Black” Crimes

Below I present the full analyses for the stereotypically “Black” crimes of drive-by shooting, resisting arrest, and vehicle theft.

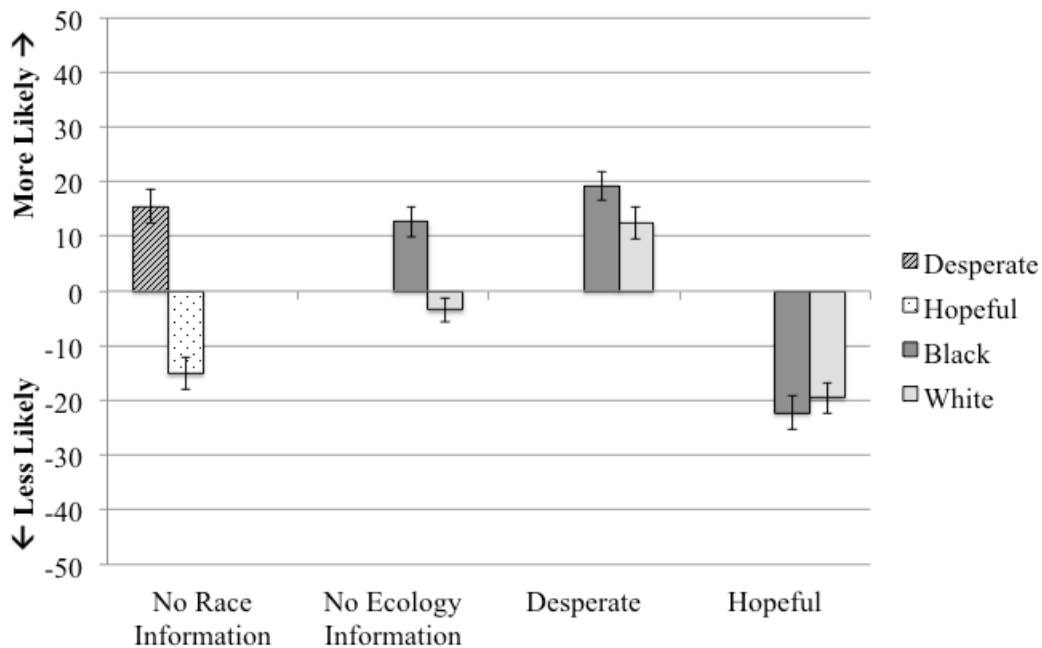
Drive-by Shooting. I first explored whether basic race stereotypes would emerge in the absence of ecology information. As suggested by the Pilot, Black targets were viewed as more likely to commit drive-by shootings than White targets ($p < .001$, $d = .70$). I then explored whether basic ecology stereotypes would emerge in the absence of race information. As predicted, individuals from desperate ecologies were viewed as more likely to commit drive-by shootings than individuals from hopeful ecologies ($p < .001$, $d = .97$). I also predicted no differences between Black and White targets within ecology; these predictions were partially supported. There were no differences in perceived comparative likelihood to commit drive-by shootings between Blacks and Whites in hopeful ecologies ($p = .99$); however, Blacks in desperate ecologies were stereotyped as more likely to commit drive-by shootings than Whites in desperate ecologies ($p = .003$, $d = .28$). Notably, the effect size of this difference was less than half that of the difference between Whites and Blacks when no ecology information was provided. See Figure S1.

Figure S1. Perceived likelihood of committing Drive-by Shooting as a function of race and ecology (Study 1). Error bars represent \pm SE.



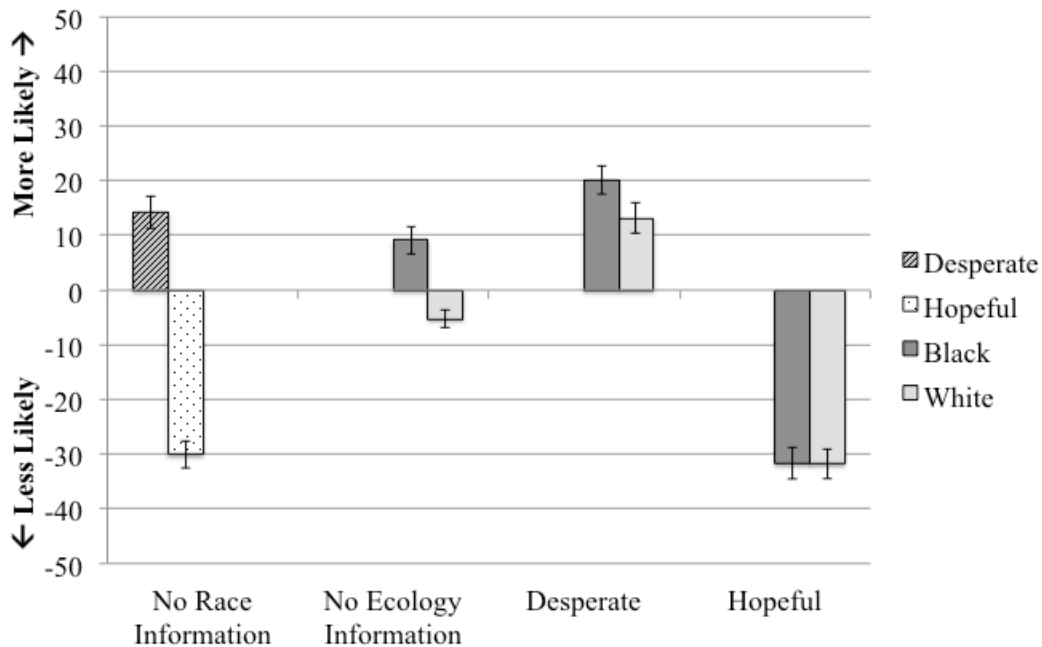
Resisting Arrest. Again, I began by exploring whether basic race stereotypes would emerge in the absence of ecology information. As suggested by the Pilot, Black targets were viewed as more likely to resist arrest than White targets ($p < .001$, $d = .37$). I next examined whether basic ecology stereotypes would emerge in the absence of race information. As predicted, individuals from desperate ecologies were viewed as more likely to resist arrest than individuals from hopeful ecologies ($p < .001$, $d = .71$). Here, the full ecology-trumping-race effect emerged: there were no significant differences in beliefs about likelihood to resist arrest between Black and White individuals from desperate ecologies ($p = .10$), nor between Black and White individuals from hopeful ecologies ($p = .50$). See Figure S2.

Figure S2. Perceived likelihood of committing Resisting Arrest as a function of race and ecology (Study 1). Error bars represent \pm SE.



Vehicle Theft. I again examined whether basic race stereotypes would emerge in the absence of ecology information. As suggested by the Pilot, Black targets were viewed as more likely to commit vehicle theft than White targets ($p < .001$, $d = .35$). I next examined whether basic ecology stereotypes would emerge in the absence of race information. As predicted, individuals from desperate ecologies were viewed as more likely to commit vehicle theft than individuals from hopeful ecologies ($p < .001$, $d = 1.12$). Within desperate ecologies, Blacks were seen as marginally more likely to commit vehicle theft than Whites ($p = .07$, $d = .17$); however, this effect was not statistically significant. There were no differences in likelihood to commit vehicle theft between Blacks and Whites in hopeful ecologies ($p = .99$). See Figure S3.

Figure S3. Perceived likelihood of committing Vehicle Theft as a function of race and ecology (Study 1). Error bars represent $\pm S$



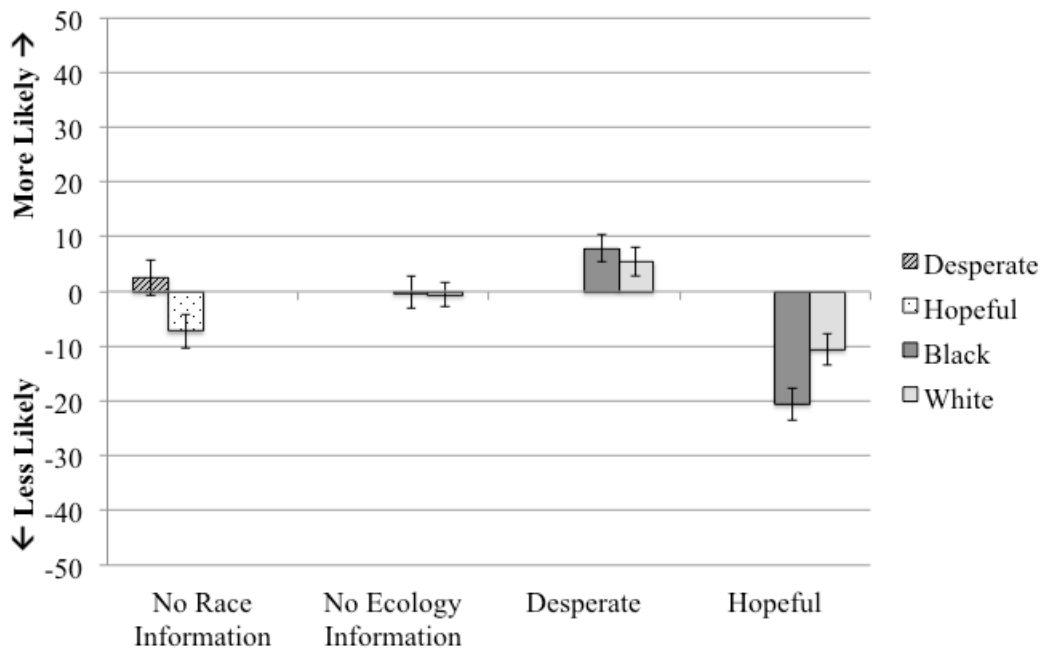
Study 1, “Race-Neutral” Crimes

Below I present the full analyses for the “Race-Neutral” crimes of statutory rape and animal abuse.

Statutory Rape. I first explored whether basic race stereotypes would emerge in the absence of ecology information. As suggested by the Pilot study, there were no differences in perceived likelihood to commit statutory rape as a function of race ($p = .92$). I then explored whether basic ecology stereotypes would emerge in the absence of race information. As predicted, individuals from desperate ecologies were viewed as more likely to commit statutory rape than individuals from hopeful ecologies ($p = .02$, d

= .23). Also as predicted, no race differences emerged within desperate ecologies ($p = .54$); however, Whites in hopeful ecologies were seen as more likely to commit statutory rape than Blacks in hopeful ecologies ($p = .01, d = .23$). See Figure S4.

Figure S4. Perceived likelihood of committing Statutory Rape as a function of race and ecology (Study 1). Error bars represent $\pm SE$.



Animal Abuse. I first examined whether basic race stereotypes would emerge in the absence of ecology information. As suggested by the Pilot study, there were no differences in perceived likelihood to commit animal abuse as a function of race ($p = .70$). I then explored whether basic ecology stereotypes would emerge in the absence of race information. As predicted, individuals from desperate ecologies were viewed as more likely to commit animal abuse than individuals from hopeful ecologies ($p < .001, d$

= .48). Also as predicted, no race differences emerged within desperate ecologies ($p = .34$) or hopeful ecologies ($p = .11$) in perceived likelihood to commit animal abuse. See Figure S5.

Figure S5. Perceived likelihood of committing Animal Abuse as a function of race and ecology (Study 1). Error bars represent \pm SE.

